3.14 THREATENED AND ENDANGERED SPECIES

SYNOPSIS

This section describes current conditions and evaluates potential impacts to threatened and endangered bird and marine mammal species from the proposed action and alternatives. Each alternative is examined by major project component: mine site; transportation infrastructure; and pipeline. Draft Biological Assessments (part of the ESA consultation process) are provided in Appendix O.

Summary of Existing Conditions - Birds:

Regulatory Framework: The Endangered Species Act of 1973 (ESA) provides for conservation of fish, wildlife, and plant species considered to be at risk of extinction (threatened or endangered) in all or a substantial portion of their ranges, and to conserve ecosystems and habitats upon which they depend. The U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) share regulatory authority for implementing the ESA. Species placed on the ESA list of threatened and endangered species are eligible for increased protective measures, including critical habitat designation. Listed species must be taken into consideration when development or land management actions are proposed.

Affected Species: There are two ESA-listed bird species that could be affected by the project; Steller's eider and spectacled eider. Both are listed as threatened, and may be present at the mouth of the Kuskokwim River, in Kuskokwim Bay, and in the Bering Sea, but are not likely to be found more than 56 miles inland from the coast. Another listed bird species, the short-tailed albatross, listed as endangered, is not expected to be affected by the project.

Expected Effects – Birds:

Alternative 1: No Action – No project-related impacts to threatened or endangered birds in the proposed Project Area.

Alternative 2: Alternative 2 could have direct and indirect effects on threatened or endangered birds through the increase in ocean barge traffic. The barges could cause minor impacts to spectacled and Steller's eiders from behavioral disturbance and injury or mortality from collision with vessels. The potential direct and indirect effects of Alternative 2 on threatened or endangered birds would be minor.

Other Alternatives: The effects of other alternatives on threatened and endangered species would be very similar to the effects of Alternative 2. Differences of note include:

- *Alternative 3A and 3B (Reduced Diesel Barging)* – Alternative 3A and 3B differ from Alternative 2 in that they require fewer ocean fuel barge trips because of the

decreased delivery of diesel fuel. Under Alternative 3A during operations, the number of ocean fuel barge trips would be approximately 67 percent lower than under Alternative 2 (5 rather than 14 fuel barge trips). Under Alternative 3B, no diesel would be barged in the Bering Sea or Kuskokwim Bay/River. Reducing the number of barge trips reduces, but does not eliminate, the potential for adverse impacts to spectacled and Steller's eiders. The chance of barges affecting eiders through behavioral disturbance or injury or mortality from collision with vessels would be reduced toward negligible.

Summary of Existing Conditions – Marine Mammals:

ESA-listed marine mammals, including pinnipeds (seals, sea lions, and walruses) and cetaceans (whales, dolphins, and porpoises), occur within the proposed water-based transportation corridor in Kuskokwim Bay and the Kuskokwim River, in the eastern Bering Sea, and in upper Cook Inlet. ESA-protected and candidate pinniped and cetacean species found within or adjacent to the Donlin Gold EIS Analysis Area are Steller sea lion, bearded seal, ringed seal, Pacific walrus, beluga whale, humpback whale, fin whale, North Pacific right whale, and northern sea otter.

Expected Effects – Marine Mammals:

Alternative 1: No-Action – No project-related impacts to threatened or endangered marine mammals in the Donlin Gold Project proposed Project Area.

Alternative 2: Donlin Gold's Proposed Project –The potential direct and indirect effects of Alternative 2 on threatened or endangered marine mammals would be negligible to minor for most species. In the event of a vessel collision with a North Pacific right whale, however, the impact would be moderate or major.

Other Alternatives: The effects of other alternatives on threatened and endangered species would be very similar to the effects of Alternative 2. Differences of note include:

- *Alternative 3A (LNG Powered Haul Trucks)* – Decreased fuel barging and construction needs would reduce potential impacts associated with vessel traffic between Dutch Harbor and Bethel and at the mouth of and in the Kuskokwim River from those impacts anticipated under Alternative 2.
- *Alternative 3B (Diesel Pipeline)* – The risks of vessel strikes would be lower for North Pacific right whales, but higher for Cook Inlet beluga whales.

3.14.1 REGULATORY FRAMEWORK

The Endangered Species Act of 1973 (ESA) provides for conservation of fish, wildlife, and plant species considered to be at risk of extinction (threatened or endangered) in all or a substantial

portion of their ranges, and to conserve ecosystems and habitats upon which they depend. The FWS and NMFS share regulatory authority for implementing the ESA. The FWS manages ESA-listed terrestrial and freshwater plant and animal species. NMFS is responsible for anadromous and marine fish species and most marine mammals, except for walrus, polar bears, sea otters, and manatees, which are under the jurisdiction of the FWS.

Species placed on the ESA list of threatened and endangered species are eligible for increased protective measures, including critical habitat designation. Either NMFS or FWS is responsible for developing recovery plans that identify conservation measures that will enhance the recovery and eventual delisting of listed species. The ESA protects listed species in regard to takings and adverse impacts on habitats. Listed species must be taken into consideration when development or land management actions are proposed.

Section 7 of the ESA requires all federal agencies to consult with the FWS and/or NMFS when any action undertaken, funded, or permitted through the agency may affect an ESA-listed species or critical habitat. If the proposed action may affect listed species, the agency may prepare a Biological Assessment.

3.14.2 ESA-PROTECTED, CANDIDATE, AND DELISTED BIRD SPECIES

3.14.1.1 AFFECTED ENVIRONMENT

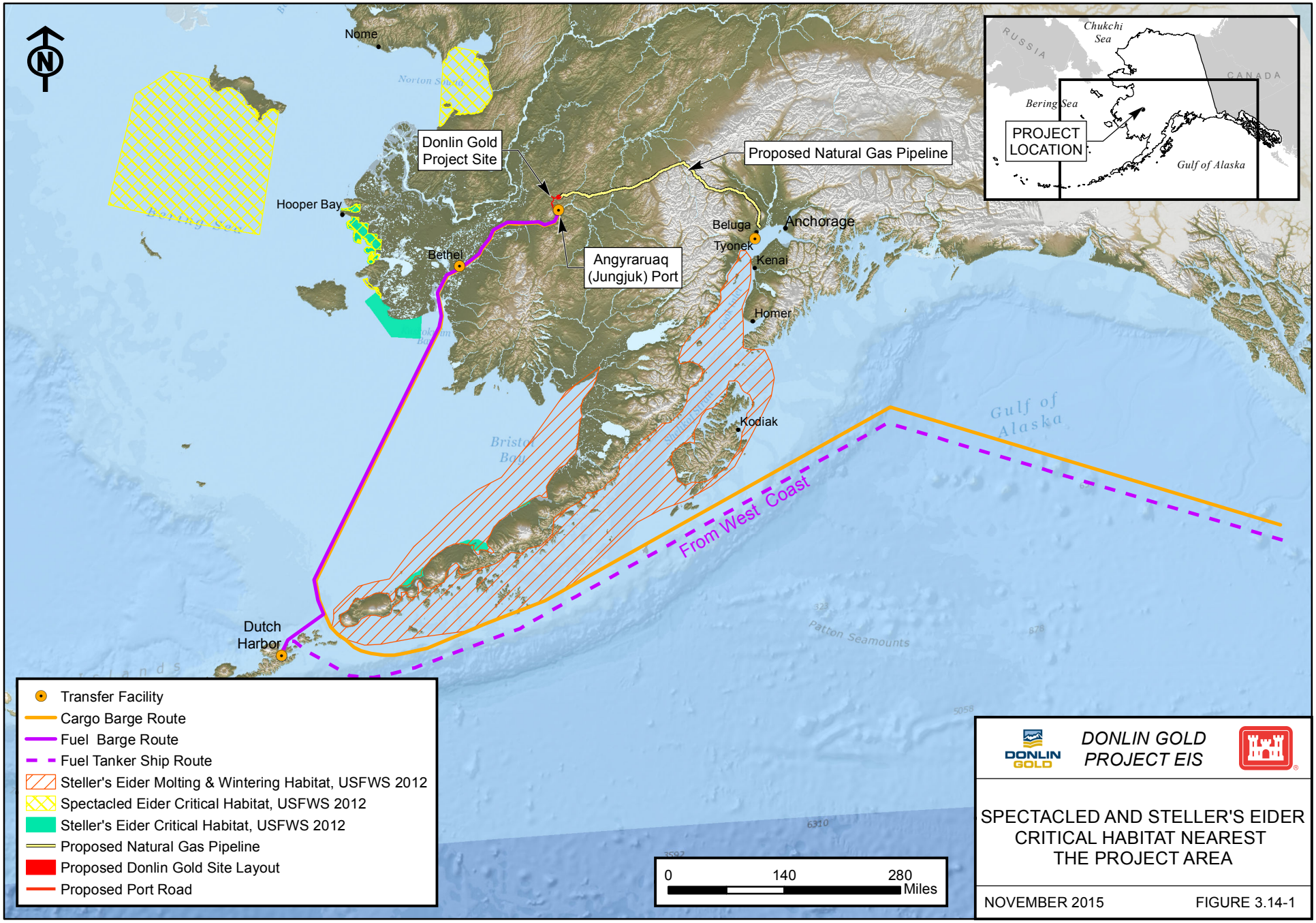
There are two ESA-listed bird species that could be affected by the project; Steller's eider (*Polysticta stelleri*); and spectacled eider (*Somateria fischeri*). Both are listed as threatened and are discussed further in this section.

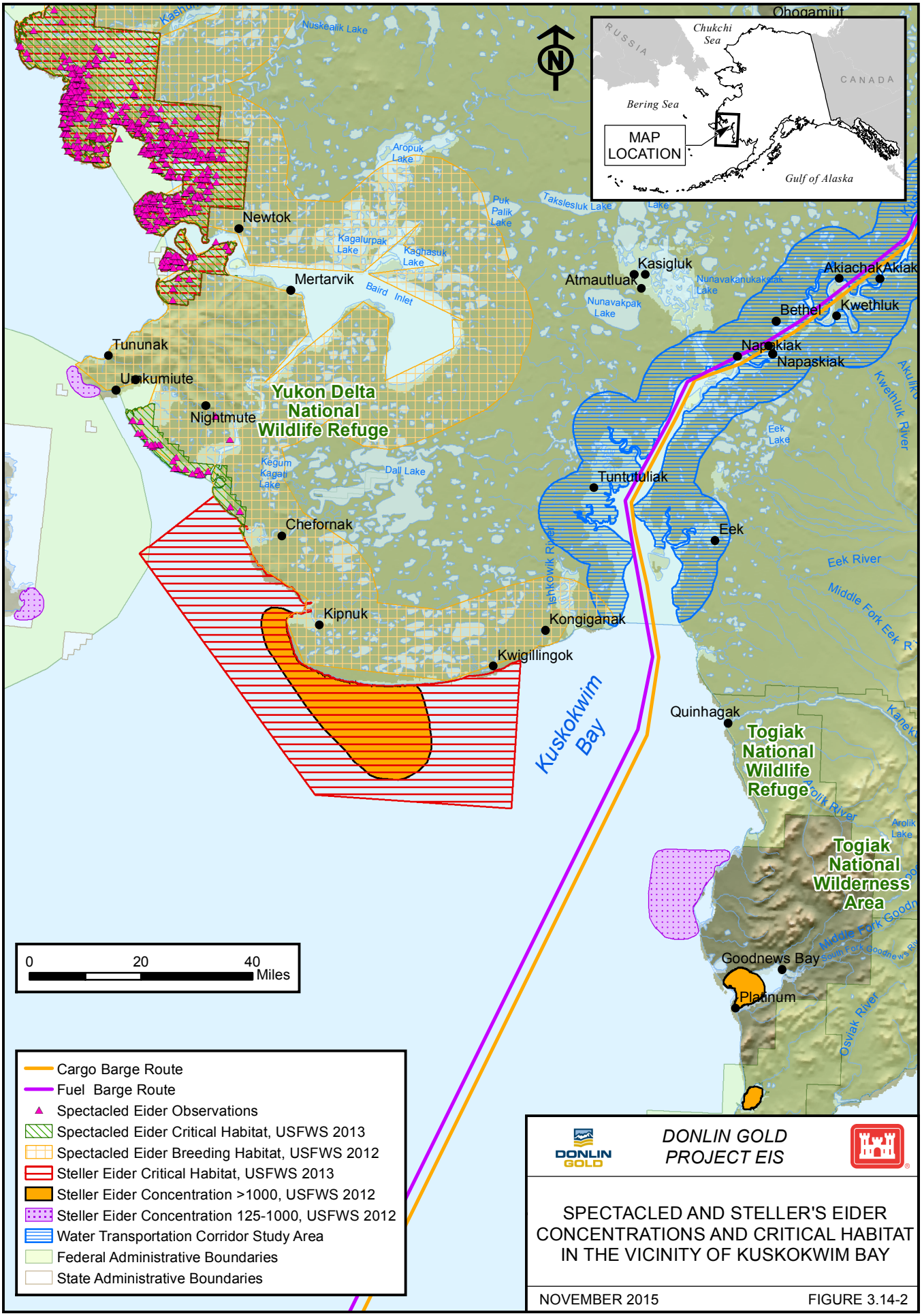
Another listed bird species, the short-tailed albatross (*Phoebastria albatrus*), listed as endangered, may occur along the marine portion of the transportation corridor. The albatross is not expected to be affected by the project-related barge traffic because the chance of any interaction is slight given the large area involved and the fact that non-fishing related vessel traffic is not known to affect this species (FWS 2008). Thus, the short-tailed albatross is not discussed further.

As shown in Figure 3.14-1, both eider species may be present at the mouth of the Kuskokwim River, in Kuskokwim Bay, and in the Bering Sea, but are not likely to be found in inland areas. Steller's eiders are also known to molt and winter near Dutch Harbor. Figure 3.14-2 is a closer view of the area near the mouth of the Kuskokwim River where they are known to concentrate.

3.14.1.1.1 MINE SITE

No eiders were observed in the vicinity of the mine site during any of the 2004-2013 bird surveys. Neither of the listed eiders is expected to occur in the vicinity of the mine because the site is so far inland of their preferred habitat. Both Steller's and spectacled eiders spend most of the year in shallow, nearshore marine waters, and nest on wet, coastal tundra near ponds or drained lake basins, generally near the coast. Steller's eiders are known to range at least as far as 56 miles inland (FWS 2002), and on the Y-K Delta spectacled eiders breed mostly within 9 miles of the coast, but have been seen up to 60 miles inland (66 FR 9146). The mine site is approximately 160 miles from the nearest coastline.


Nome
Donlin Gold Project Site
Proposed Natural Gas Pipeline
Hooper Bay
Bethel
Angyraruaq (Jungjuk) Port
Beluga
Anchorage
Tyonek
Kenai
Homer
Kodiak
Dutch Harbor
From West Coast
Gulf of Alaska
Bristol Bay
Patton Seamounts
Chukchi Sea
RUSSIA
CANADA
Bering Sea
PROJECT LOCATION
Gulf of Alaska
Transfer Facility
Cargo Barge Route
Fuel Barge Route
Fuel Tanker Ship Route
Steller's Eider Molting & Wintering Habitat, USFWS 2012
Spectacled Eider Critical Habitat, USFWS 2012
Steller's Eider Critical Habitat, USFWS 2012
Proposed Natural Gas Pipeline
Proposed Donlin Gold Site Layout
Proposed Port Road
0
140
280
Miles
DONLIN GOLD
DONLIN GOLD PROJECT EIS
SPECTACLED AND STELLER'S EIDER CRITICAL HABITAT NEAREST THE PROJECT AREA
NOVEMBER 2015
FIGURE 3.14-1


Nuskealik Lake
Aropuk Lake
Puk Palik Lake
Takslesluk Lake
Kagalurpak Lake
Kaghasuk Lake
Baird Inlet
Newtok
Mertarvik
Tununak
Umkumiute
Nightmute
Yukon Delta National Wildlife Refuge
Kegum Kagati Lake
Dall Lake
Chefornak
Kipnuk
Kongiganak
Kwigillingok
Kuskokwim Bay
Ishkowik River
Tuntutuliak
Eek
Eek River
Middle Fork Eek R
Eek Lake
Kwethluk River
Akulik
Kasigluk
Atmautluak
Nunavakanukakslak Lake
Nunavakpak Lake
Akiachak
Akiak
Bethel
Kwethluk
Napakiak
Napaskiak
Quinhagak
Togiak National Wildlife Refuge
Arolik River
Arolik Lake
Togiak National Wilderness Area
Middle Fork Goodnews
South Fork Goodnews R
Goodnews Bay
Platinum
Osviak River
Kanek
Ohogamiut
RUSSIA
Chukchi Sea
CANADA
Bering Sea
MAP LOCATION
Gulf of Alaska
N
0
20
40
Miles
Cargo Barge Route
Fuel Barge Route
Spectacled Eider Observations
Spectacled Eider Critical Habitat, USFWS 2013
Spectacled Eider Breeding Habitat, USFWS 2012
Steller Eider Critical Habitat, USFWS 2013
Steller Eider Concentration >1000, USFWS 2012
Steller Eider Concentration 125-1000, USFWS 2012
Water Transportation Corridor Study Area
Federal Administrative Boundaries
State Administrative Boundaries
DONLIN GOLD
DONLIN GOLD PROJECT EIS
SPECTACLED AND STELLER'S EIDER CONCENTRATIONS AND CRITICAL HABITAT IN THE VICINITY OF KUSKOKWIM BAY
NOVEMBER 2015
FIGURE 3.14-2

3.14.1.1.2 TRANSPORTATION FACILITIES

Steller's Eider

Large numbers of Steller's eiders use habitat within Kuskokwim Bay for spring staging and during a 3-week molt period following breeding. During their molt they are unable to fly and are vulnerable to disturbances. After molting, Steller's eiders disperse throughout southwest and southcentral Alaska. During the early spring, it is thought that the entire Alaska overwintering population of Steller's Eiders spend anywhere from days to a few weeks in northern Kuskokwim Bay before leaving for northern nesting areas (Larned 2007).

The FWS has designated Steller's eider critical habitat in Kuskokwim Bay around Kuskokwim Shoals (from the mouth of the Kolavinarak River to near Kwigillingok village), in the northwest portion of the bay (Figure 3.14-2).

Although Waterway Corridor Surveys were conducted for four years (2006-2009), eiders were only seen in 2009 (RWJ 2010b). One spectacled eider was identified near Fowler Island, and one King Eider seen near Tuntutuliak, but the remaining 17 sightings were recorded as unidentified eiders. Seven birds were seen in June, and twelve in August, both groups were seen from the same Fowler Island station, but were too far away and seen too briefly to make a positive identification. It was noted that the group of seven seen in June could possibly be spectacled eiders, but the other 12 were not identifiable. No eiders were seen during the June 18-19, 2013 boat survey of the Kuskokwim River from Crooked Creek to Bethel (Owl Ridge 2013b).

The following summary of Steller's eiders life history is limited to those aspects that are relevant to the discussion of potential impacts that follows.

Steller's eiders are small diving ducks that spend most of the year in shallow, nearshore marine waters. During the fall and winter they congregate on exposed shoals, in protected lagoons and bays, and along rocky headlands and islets. They feed by diving and dabbling for mollusks and crustaceans in shallow water. In summer, they nest in tundra adjacent to small ponds or within drained lake basins and frequent tundra ponds, lakes, and wetlands (FWS 2012b).

Three breeding populations are recognized, two in Arctic Russia and one in Alaska. Only Steller's eiders that nest in Alaska are listed as threatened. Individuals from the Russian breeding populations that may also occur in the EIS Analysis Area are not protected by the ESA. In Alaska, the northern breeding population historically nested along the northern Arctic Coastal Plain from Wainwright to Cape Halkett. The western breeding population was reported nesting on the Seward Peninsula, St. Lawrence Island, and southern Norton Sound, but primarily nested on the central Y-K Delta. Steller's eiders now breed almost exclusively on the Alaska Coastal Plain. Based on aerial surveys near Barrow, the Alaska-breeding population is thought to number about 500 individuals (FWS 2011).
Early naturalists considered the Steller's eider a common nester in the Y-K Delta area during the first half of the 20th century (FWS 2013c). In 1997, the Alaska-breeding population was listed as threatened under the Endangered Species Act due to the contraction of the species breeding range in Alaska, reduced numbers of Steller's eiders breeding in Alaska, and the resulting vulnerability of the remaining breeding population to extirpation. Steller's eiders historically nested in western and northern Alaska. In addition to the Y-K Delta, they were recorded nesting on St. Lawrence Island, the Seward and Alaska peninsulas, and the Aleutian Islands. While they historically nested on the Y-K Delta, only a few nests have been found there in recent years. On

June 21, 2013, researchers discovered an active Steller's eider nest on the central coast of the Y-K Delta while conducting other research. This is the first nest observed in western Alaska since 2005 (FWS 2013c).

In 2001, the FWS designated 2,830 square miles of critical habitat for the Alaska-breeding population of Steller's eiders at historic breeding areas on the Y-K Delta, a molting and staging area in the Kuskokwim Shoals, and molting areas in marine waters at Seal Islands, Nelson Lagoon, and Izembek Lagoon (66 FR 8850). Approximately 2,800 square miles and 850 miles of coastline are included in critical habitat (FWS 2012b). Figure 3.14-1 shows the areas of critical habitat closest to the Project Area.

Fall Molt Distribution

After breeding, Steller's eiders move to marine waters where they mix with birds from the Russian breeding population and undergo a 3-week flightless molt. The Pacific-wintering population molts in several main areas along the Alaska Peninsula: Izembek Lagoon (Metzner 1993; Dau 1991; Laubhan and Metzner 1999), Nelson Lagoon, Herendeen Bay, and Port Moller (Gill et al. 1981; Petersen 1981. Over 15,000 Steller's eiders have also been observed in Kuskokwim Bay (Larned and Tiplady 1996).

Winter Distribution

After molt, many of the Pacific-wintering Steller's eiders congregate in select near-shore waters throughout the Alaska Peninsula and the Aleutian Islands, around Nunivak Island, the Kodiak Archipelago, and in lower Cook Inlet, although thousands may remain in lagoons used for molting (Bent 1987; Larned and Zwiefelhofer 2002; Larned 2000). The number of Steller's eiders molting and wintering along the Alaska Peninsula has declined since the 1960s. At 54,191, the 2002 Pacific population estimate by Larned (2002) was the lowest recorded since aerial surveys were initiated in 1992 (FWS 2012a).

Spring Migration

The majority of the world's population of Steller's eiders migrates along the Bristol Bay coast of the Alaska Peninsula in the spring, crosses Bristol Bay toward Cape Peirce, then continues northward along the Bering Sea coast. Annual spring aerial surveys to monitor the population of Stellers's eiders migrating northward in southwestern Alaska have been conducted in 1992, 1993, 1994, 1997, 1998, 2000, 2001 and 2002. The long-term trend (1992-2012) indicates an annual decline of 2.4 percent per year (Larned 2012).

Larned (1998) concluded that Steller's eiders show strong site fidelity to "favored" habitats during migration, where they congregate in large numbers to feed before continuing their northward migration. Several areas receive consistent use during spring migration, including Kuskokwim Bay.

Larned and Bollinger (2009) report that spring pre-migration staging surveys conducted between 1992 and 2009 in southwestern Alaska revealed a persistent pattern of habitat use by Steller's eiders and most other sea duck species. This pattern is evidence of the importance of certain areas, including Kuskokwim Bay, to staging and migrating waterfowl.

The Steller's Eider Recovery Team is considering reintroducing the Steller's eider to the Y-K Delta using a captive flock raised at the Alaska SeaLife Center (FWS 2013c). The near-

disappearance of Steller's Eiders from the Y-K Delta was one of the primary factors leading to the listing of the Alaska-breeding population as threatened under the Endangered Species Act. Consequently, reestablishment of the species to the Y-K Delta is currently considered essential for recovery (FWS 2002).

Spectacled Eider

The current breeding range of spectacled eiders includes the coastal area from the west side of the mouth of the Kuskokwim River north and west along the coast. There is no critical habitat for spectacled eiders within or adjacent to the EIS Analysis Area (Figure 3.14-1). Small numbers of spectacled eiders may molt near Kipnuk, on the northwestern land portion of Kuskokwim Bay, where 117 spectacled eiders were observed during an aerial survey in September 1994 (FWS 1996). A more extensive survey in September 1996 did not locate any spectacled eiders in Kuskokwim Bay (Larned and Tiplady 1996). During 15 years (1992 to 2009) of spring staging surveys of estuarine and near shore habitats along the coast of southwestern Alaska, from the Y-K Delta to the west end of the Alaska Peninsula, the number of spectacled Eiders dropped from 40 in 1992 to 0 in 2001, and none have been observed during the surveys since (Larned and Bollinger 2009).

The following summary of spectacled eiders' life history is limited to those aspects that are relevant to the discussion of potential impacts that follows.

Spectacled eiders are large diving ducks that spend most of the year in marine waters, where they feed primarily on bottom-dwelling mollusks and crustaceans. From November through March or April, they remain in open sea or in polynyas (areas of open water at predictable, recurrent locations in sea ice covered regions), or open leads (more ephemeral breaks in the sea ice, often along coastlines) in the sea ice of the northern Bering Sea at water depths of less than 240 feet (Petersen et al. 2000). In spring, breeding pairs move to nesting areas on wet coastal tundra and establish nests near shallow ponds or lakes.

As recently as the 1960s, about 50,000 pairs of spectacled eiders nested on the Y-K Delta in western Alaska. By 1992, only about 2,000 nesting pairs remained and an average of about 5,000-6,000 nest on the Y-K Delta today (FWS 2012b). Between the 1970s and the 1990s, the breeding population of spectacled eiders on the Y-K Delta declined by over 96 percent. The causes of this steep decline remain unknown, but its magnitude prompted the FWS to list the species as threatened under the Endangered Species Act in 1993.

Today, three primary nesting areas remain: the central coast of the Y-K Delta, the Arctic coastal plain of Alaska, and the Arctic coastal plain of Russia (FWS 2012b). Important late summer and fall molting areas have been identified in eastern Norton Sound and Ledyard Bay in Alaska, and in Mechigmenskiy Bay and an area offshore between the Kolyma and Indigirka River Deltas in Russia. Wintering flocks of spectacled eiders have been observed in openings in sea ice in the Bering Sea between St. Lawrence and St. Matthew islands (FWS 2010).

In its latest 5-year review, the FWS (2010) reported that recent data suggest the Y-K Delta nesting population is increasing slightly.

3.14.1.1.3 PIPELINE

No eiders were observed in the vicinity of the proposed pipeline corridor during any of the field surveys. Neither of the listed eiders is expected to occur in the proposed pipeline corridor

because most of it is too far inland of their preferred habitat. Both Steller's and spectacled eiders spend most of the year in shallow, nearshore marine waters, and nest on wet, coastal tundra near ponds or drained lake basins, generally near the coast. Steller's eiders are known to range at least as far as 56 miles inland (FWS 2002), and on the Y-K Delta spectacled eiders breed mostly within 9 miles of the coast, but have been seen up to 60 miles inland (66 FR 9146). Figure 3.14-1 shows that the portion of Cook Inlet close to the west end of the proposed pipeline corridor is not known to be used by either eider species, although lower Cook Inlet may be used as molting and wintering range by Steller's eiders (Larned 2006).

3.14.2.1.2 CLIMATE CHANGE

Climate change is affecting resources in the EIS Analysis area and trends associated with climate change are projected to continue into the future. Section 3.26.3 discusses climate change trends and impacts to key resources in the physical and biological environments including atmosphere, water resources, permafrost, and vegetation. Current and future effects on birds are tied to changes in physical resources and vegetation (discussed in Section 3.26.4).

3.14.1.2 ENVIRONMENTAL CONSEQUENCES

This section describes potential impacts to threatened and endangered species as a result of the proposed Donlin Gold Project and its associated components. Table 3.14-1 indicates the mechanisms by which effects of the alternatives on ESA-listed birds can be systematically assessed. This table summarizes criteria for determining the impact level based on intensity (magnitude), duration, extent, and context.

Table 3.14-1: Impact Criteria for Effects on ESA-Listed Birds

Type of Effect	Impact Component	Effects Summary		
Behavioral Disturbance	Magnitude or Intensity	**Low**: Changes in behavior due to project activity may not be noticeable; animals remain in the vicinity.	**Medium**: Noticeable change in behavior due to project activity that may affect reproduction or survival of individuals.	**High**: Acute or obvious/abrupt change in behavior due to project activity; life functions are disrupted; animal populations are reduced in the EIS Analysis Area.
	Duration	**Temporary**: Behavior patterns altered infrequently, but not longer than the span of project construction and would be expected to return to pre-activity levels after actions causing impacts were to cease.	**Long-term**: Behavior patterns altered for several years and would return to pre-activity levels long-term (from the end of construction through the life of the mine, and up to 100 years) after actions causing impacts were to cease.	**Permanent**: Change in behavior patterns would continue even if actions that caused the impacts were to cease; behavior not expected to return to previous patterns.

Table 3.14-1: Impact Criteria for Effects on ESA-Listed Birds

Type of Effect	Impact Component	Effects Summary		
Behavioral Disturbance (continued)	Geographic Extent	**Local**: Impacts limited geographically; limited to vicinity of the Project Area or a subset.	**Regional**: Affects resources beyond a local area, potentially throughout the EIS Analysis Area.	**Extended**: Affects resources beyond the region or EIS Analysis Area.
	Context	**Common**: Affects usual or ordinary resources in the EIS Analysis Area; resource is not depleted in the locality or protected by legislation.	**Important**: Affects depleted species within the locality or region, or resources proposed as candidates or listed as threatened under the ESA but whose populations are currently stable, or the portion affected is not a large percentage of the population.	**Unique**: Affects species listed as endangered under the ESA, or those listed as threatened or proposed for listing under the ESA with small or declining populations.
Habitat Alterations	Magnitude or Intensity	**Low**: Changes in resource character or quantity may not be measurable or noticeable.	**Medium**: Noticeable changes in resource character and quantity.	**High**: Acute or obvious changes in resource character and quantity.
	Duration	**Temporary**: Resource would be reduced infrequently but not longer than the span of 1 year and would be expected to return soon to pre-activity levels.	**Long-term**: Resource would be reduced for up to the life of the project and would return to pre-activity levels long-term (from the end of construction through the life of the mine, and up to 100 years) after that.	**Permanent**: Resource would not be anticipated to return to previous character or levels.
	Geographic Extent	**Local**: Impacts limited geographically; limited to vicinity of the Project Area.	**Regional**: Affects resources beyond a local area, potentially throughout the EIS Analysis Area.	**Extended**: Affects resources beyond the region or EIS Analysis Area.
	Context	**Common**: Affects usual or ordinary resources in the EIS Analysis Area; resource is not depleted in the locality or protected by legislation.	**Important**: Affects depleted habitat within the locality or region or habitat protected by legislation other than the ESA.	**Unique**: Affects habitat protected by ESA legislation, such as designated critical habitat.

Table 3.14-1: Impact Criteria for Effects on ESA-Listed Birds

Type of Effect	Impact Component	Effects Summary		
Injury and Mortality	Magnitude or Intensity	**Low**: Any incidents of injury or mortality are so rare they are undetectable; population level effects not detectable.	**Medium**: Incidents of injury or mortality are detectable; populations remain within normal variation.	**High**: Incidents of mortality or injury create population-level effects.
	Duration	**Temporary**: Events with potential for mortality or injury would occur for a brief, discrete period lasting less than one year, or up to the duration of the construction period.	**Long-term**: Events with potential for mortality or injury would continue for up to the life of the project.	**Permanent**: Potential for mortality or injury would persist after actions that caused the disturbance ceased.
	Geographic Extent	**Local**: Impacts would be limited to vicinity of the Project Area or subsets.	**Regional**: Impact would occur beyond a local area, potentially throughout the EIS Analysis Area.	**Extended**: Impacts would occur beyond the region or EIS Analysis Area.
	Context	**Common**: Affects usual or ordinary species in the EIS Analysis Area; species is not depleted in the locality, listed under the ESA, or considered a Species of Concern.	**Important**: Affects depleted species within the locality or region, or resources proposed as candidates or listed as threatened under the ESA but whose populations are currently stable, or the portion affected is not a large percentage of the population.	**Unique**: Affects species listed as endangered under the ESA, or those listed as threatened or proposed for listing under the ESA with small or declining populations.

Effects summaries per component and effect inform summary impact levels that range from negligible to major; no effect is also possible. Impacts are described below in NEPA terms appropriate for ESA impact discussions.

3.14.2.1.3 ALTERNATIVE 1 – NO ACTION

Under the No Action Alternative, there would be no mine site development, no transportation infrastructure facilities, and no natural gas pipeline. Therefore, there would be no project-related impacts to threatened or endangered birds in the proposed Project Area.

3.14.2.1.4 ALTERNATIVE 2 – DONLIN GOLD'S PROPOSED ACTION

Mine Site – Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

The mine site would have no direct impact on either Steller's or spectacled eiders because neither species occurs there. The mine site is approximately 160 miles from the nearest coastline, while both eider species are sea ducks that nest in coastal tundra areas and spend the nonbreeding season at sea and generally are not found more than 56-60 miles inland (FWS 2002 and FR 66 FR 9146).

Transportation Facilities – Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

The only project component that could impact the Steller's eider or the spectacled eider is the transportation of diesel fuel and general cargo via ocean-going barges as they transit from Dutch Harbor or the Unimak Pass area to and from the Kuskokwim River and upriver to the port at Bethel. The route across the Bering Sea and Kuskokwim Bay is expected to be within about a 10-mile wide corridor, narrowing in the Kuskokwim River (Figure 3.14-1).

Direct and indirect effects on these species could potentially include:

- behavioral disturbance from increased barge traffic,
- injury or mortality from collisions with barges, and
- contamination, injury, or death from a fuel or chemical spill (addressed in Section 3.24, Spill Risk).

Temporal/Spatial Overlap

Figure 3.14-1 and Figure 3.14-2 show that the presence of both eider species within the EIS Analysis Area is generally limited to Kuskokwim Bay. Both the critical habitat and known concentration areas are several miles outside the barge corridor. The critical habitat is more than 10 miles from the nearest point on the barge corridor, and the concentration areas are 10 to 30 miles away. The closest that barges may come to concentrations of either species may be where the cargo barges pass by the Alaska Peninsula where Steller's eiders molt. The cargo barges are expected to be farther offshore than the molting eiders, and the fuel barges traveling to Dutch Harbor are expected to be even farther offshore. The Steller's eiders are sea ducks that feed by diving in relatively shallow water, so they are likely to be near the shore and away from the barge corridor. The spectacled eider's known breeding areas are about 80 miles north, but potential breeding areas may not be far in linear distance (as close as 5 miles) from the lower Kuskokwim River barge route, but the spectacled eiders nest on the tundra, which would provide an effective buffer from effects of the barges on the nesting habitat itself. Molting concentration areas are also many miles away in Norton Sound or Ledyard Bay. Smaller numbers of either species may occur in the barge corridor outside the concentration areas. They have been seen up to 56 miles from the coast. Scattered individuals may fly past barges, but the likelihood of collisions is very small.

Table 3.14-2 demonstrates that project activities (ocean barge traffic) may occur at the same time that both eider species may be present.

Table 3.14-2: Temporal Overlap of Ocean Barge Traffic and Spectacled and Steller's Eider Presence in Kuskokwim Bay

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Barge traffic[1]					■	■	■	■	■	■		
Steller's Eider presence in Dutch Harbor[4]	■	■	■								■	■
Steller's Eider fall molting (unable to fly)[2]							■	■	■	■	■	
Steller's Eider spring staging[2]			■	■	■							
Spectacled Eider breeding on coastal tundra areas[3]						■	■	■				

Notes:

Shaded cells indicate presence.

1 Barge traffic will use the ice-free period of the year, which varies in start and end dates.
2 Larned 2007, Steller's Eider Spring Migration Surveys
3 FWS data from Figure 3.14-2
4 FWS 2007

The temporal overlap that is expected to be most important in terms of likelihood of impacts is the cargo barges passing by part of the area where Steller's eiders molt. The birds would be most vulnerable at that time. Nesting spectacled eiders may be close to the barges, but they would be shielded from effects by the intervening tundra on which they nest. Potentially, nesting spectacled eider individuals could be feeding in the Kuskokwim River nearer the passing barges, but they would be able to fly. Eiders wintering near Dutch Harbor would not be affected because they are there only during the late fall and winter months, when the barges would not be there (see Table 3.14-2).

Some studies have documented a variety of behavioral responses to vessel-related disturbance, including increased alert behavior, flight, swimming, and a reduction in foraging (Agness 2006). Waterbird responses to vessel traffic may be dependent on species, biological cycle (e.g., breeding, migrating, stopover, wintering), and/or vessel attributes (e.g., vessel type, size, speed, and distance from the birds). Schwemmer et al. (2011) found that flush distances of four sea duck species differed substantially, with the longest distances recorded for common scoters (*Melanitta nigra*) and the shortest for common eiders (*Somateria mollissima*), with flush distance being positively related to flock size. The study also found indications of habituation in sea ducks within areas of channeled traffic. Because the barge will follow established travel lanes and will not approach nearshore habitats used by molting Steller's eiders, the potential for disturbance or collisions in the vicinity of Kuskokwim Bay is limited. Steller's eiders could also be encountered during barge passage in and out of Dutch Harbor and Iliuliuk Bay, but these birds would be well conditioned to boat and ship traffic given the normal shipping and summer fishing activity at Dutch Harbor. While the additional barge traffic would increase the risk of effects, the level of increase would be small in relation to the total ship traffic in the area. In addition, the barges will be traveling at relatively low speed (less than 10 knots), which would also reduce the effects.

Spectacled Eider

Spectacled eiders are known to nest on the coastal wetlands north and west of Kuskokwim Bay and may also molt nearer the EIS Analysis Area. Eiders are particularly vulnerable during the fall molting period, when they are unable to fly for approximately three weeks. Males, failed breeders, and nesting females molt at different times between June and October (FWS 2010). At its closest point, near the mouth of the Kuskokwim River, the barge route is approximately 80 miles from known spectacled eider breeding habitat. It is much less likely that spectacled eiders would be encountered anywhere else along the barge route based on their rarity in the travel corridors during the summer months.

Spectacled eiders, their food source, and other habitat features could potentially be exposed to discharges and varying sized spills. This could occur from vessels transporting fuel and cargo, as well as fuel spilled at any of several transfer points, including barge to storage tank transfer, or ocean barge to river barge transfer at the Bethel Port or in the event of a stranded barge that requires lightering of fuel. Section 3.24, Spill Risk, provides analysis of risks and potential impacts of spills from fuel barges and storage tanks along the marine and riverine transportation corridors.

Steller's Eider

Steller's eiders gather in large flocks in Kuskokwim Bay during the spring for staging prior to migration to breeding areas, and also in the fall for molting. Kuskokwim Shoals, located in the northwest portion of Kuskokwim Bay, has been identified as critical habitat for Steller's eiders (66 FR 8850).

Studies on Steller's eiders show variable degrees of tolerance to vessel traffic. They commonly overwinter in areas of high activity near the Homer spit and the Unalaska airport and do not flee in response to human activities on adjacent shorelines, but they have been observed to be sensitive to boat traffic in Izembek Lagoon (FWS 2012a). In a study of responses of wintering waterfowl to aircraft traffic, Ward and Stehn (1989) found that Steller's eiders flushed when aircraft came within 300 meters. Disturbance from boat traffic can cause Stellers's eiders to fly away from preferred foraging and resting sites, thereby disrupting foraging or resting periods. Disturbance of sufficient frequency, duration, or severity can lower individual fitness through increased time spent in flight and reduced time spent feeding or resting (FWS 2012a).

Project-related marine traffic would be routed well to the south and east of the Kuskokwim Shoals and to the west of Chagvan Bay, which would avoid physical disturbance of eider concentrations by noise or movement (ARCADIS 2013a). Figure 3.14-1 and Figure 3.14-2 show the barge route is approximately 10 miles from the Steller's eider critical habitat, and about the same distance from the closest concentration area.

Low-flying Steller's or spectacled eiders can be killed or injured by colliding with vessels. Fast moving passenger vessels have a higher potential for collisions with wildlife than slower barges and tugs. Although the probability of injury or death of an eider due to collision with a barge would increase with the additional project-related barge traffic, and the chance of collisions increases with fog or darkness, especially if the barge has many lights that could attract the birds, the risk is expected to be low because of the relatively slow speed of the barges (less than 10 knots). Therefore, no direct effects are expected to occur from collisions with barges.

Under Alternative 2, the increase in barge traffic within the barge season is outlined in Table 3.14-3.

Table 3.14-3: Estimated Annual Ocean Barge Traffic under Alternative 2

Barge	Transporting	From	To	Number of Trips per season
Ocean	Cargo	Marine Terminals	Bethel	16 during construction 12 during operations
Ocean	Fuel	Marine Terminals	Dutch Harbor	14
Ocean	Fuel	Dutch Harbor	Bethel	14

Source: SRK 2013a

Pipeline – Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

The proposed pipeline would have no direct or indirect impacts on either Steller's or spectacled eiders because neither species occurs there. Both eider species are marine birds that generally are not found more than 56 to 60 miles inland (FWS 2002 and 66 FR 9146). The eastern end of the proposed pipeline corridor is located within 56 miles of Cook Inlet, but neither eider species is known to occur in upper Cook Inlet. Also, no nesting habitat for either species would be affected by the pipeline because they are not known to nest in any of the area traversed by the pipeline.

Climate Change Summary for Alternative 2

Predicted overall increases in temperatures and precipitation and changes in the patterns of their distribution (McGuire 2015; Chapin et al. 2010; Chapin et al. 2006; Walsh et al. 2005) have the potential to influence the projected effects of the Donlin Gold Project on vegetation, wetlands, and associated bird habitat. An overall warming/drying trend would tend to convert some wetlands to uplands and tend to increase the cover of shrubs and trees in previously open areas. Warming conditions may lead to increases in infectious disease in wildlife, or conditions that favor the release of persistent environmental pollutants that can affect the immune system and favor an increased disease rate (Bradley et al. 2005). Coastal dependent bird species such as spectacled eider may lose habitat if sea levels change (ADF&G 2010b). Changes in marine productivity could negatively affect food webs important to bird species, such as reduction in clam beds used in winter by spectacled eiders. See Section 3.26 (Climate Change) for further details on climate change and resources.

Summary of Impacts for Alternative 2

Alternative 2 could have direct and indirect effects on threatened or endangered birds through the increase in ocean barge traffic. The barges could cause minor impacts to spectacled and Steller's eiders from behavioral disturbance and injury or mortality from collision with vessels. Therefore, the potential direct and indirect effects of Alternative 2 on threatened or endangered birds would be minor (summarized in Table 3.14-4). This would be in keeping with an ESA effects determination of May Affect, Not Likely to Adversely Affect for Steller's eiders and No Effect for spectacled eiders (Draft Biological Assessment for FWS Species, Appendix O). Effects determinations will be made in the ESA Consultation, which is a parallel process to NEPA.

Table 3.14-4: Impact Levels of Alternative 2 by Impact Type and Project Component

Impacts	Impact Level				
	Magnitude or Intensity	Duration	Geographic Extent	Context	Summary Impact Rating[1]
Mine Site: No impacts are expected because neither spectacled nor Steller's eiders are known to occur in the area.					
Transportation Infrastructure:					
Behavioral disturbance from increased barge traffic	Low	Long-term	Local	Unique (Steller's eider) Important (spectacled eider)	Minor
Risk of injury or mortality from collisions	Low	Long-term	Local	Unique (Steller's eider) Important (spectacled eider)	Minor
Pipeline: No impacts are expected because neither spectacled nor Steller's eiders are known to occur in the area.					

Notes:

1 The summary impact rating accounts for impact reducing design features proposed by Donlin Gold and Standard Permit Conditions and BMPs that would be required. It does not account for additional mitigation measures the Corps is considering.

These effects determinations take into account impact-reducing design features (Table 5.2-1 in Chapter 5, Impact Avoidance, Minimization, and Mitigation) proposed by Donlin Gold and also the Standard Permit Conditions and BMPs (Section 5.3) that would be implemented. Several examples of these are presented below.

Design features most important for reducing impacts to ESA-protected, candidate, and delisted bird species include:

- Ocean fuel barges would be double hulled and have multiple isolated compartments for transporting fuel to reduce the risk of a spill;
- The project design includes a natural gas pipeline to decrease the amount of barging to transport diesel fuel. The design decision to use a natural gas pipeline instead of barging 110 Mgal of diesel per year was in response to community concern about barge traffic levels.

Standard Permit Conditions and BMPs most important for reducing impacts to ESA-protected, candidate, and delisted bird species include:

- Development and maintenance of ODPCPs, SPCC Plans, and FRPs.

Additional Mitigation and Monitoring for Alternative 2

While the Corps is considering additional mitigation and monitoring to reduce effects to other resources (Table 5.5-1 and Table 5.7-1 in Chapter 5, Impact Avoidance, Minimization, and Mitigation), no additional mitigation measures have been identified to reduce effects to ESA protected, candidate, and delisted bird species. Thus, the summary impact rating for would remain minor.

3.14.2.1.5 ALTERNATIVE 3A – REDUCED DIESEL BARGING: LNG-POWERED HAUL TRUCKS

Alternative 3A differs from Alternative 2 in that it requires substantially fewer ocean fuel barge trips because of the decreased use of diesel fuel. Under Alternative 3A the number of ocean fuel barge trips would be approximately 67 percent lower than under Alternative 2 (5 rather than 14 fuel barge trips). The number of cargo barge trips would be unchanged.

Reducing the number of barge trips reduces, but does not eliminate, the potential for adverse impacts to spectacled and Steller's eiders. Alternative 3A could have direct and indirect effects on threatened or endangered birds through the ocean barge traffic. The chance of barges affecting eiders through behavioral disturbance or injury or mortality from collision with vessels would be reduced compared with Alternative 2. Impacts associated with climate change would also be the same as those discussed for Alternative 2. Therefore, the potential direct and indirect effects of Alternative 3A on threatened or endangered birds would be minor.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to ESA-protected, candidate, and delisted bird species are described in Alternative 2 and would apply to Alternative 3A. No additional mitigation measures have been identified to reduce effects to ESA-protected, candidate, and delisted bird species.

3.14.2.1.6 ALTERNATIVE 3B – REDUCED DIESEL BARGING: DIESEL PIPELINE

Under Alternative 3B, an 18-inch diameter diesel pipeline would be constructed from Cook Inlet to the mine site instead of the natural gas pipeline. It would eliminate diesel barging on the Kuskokwim River except during construction. The diesel pipeline would be located in the same corridor proposed for the natural gas pipeline under Alternative 2, with an additional segment between Tyonek and the start of the proposed corridor for the natural gas line. The diesel pipeline would extend 334 miles from Cook Inlet to the Donlin Mine site, including an 18-mile extension from the proposed terminus of the natural gas pipeline, south to Tyonek, which would cross the Beluga River.

The location of the proposed pipeline would remain the same as Alternative 2; however, rather than natural gas, the pipeline would carry diesel fuel. The addition of a new dock, involving pile driving, or refurbishing of an existing dock at Tyonek would not affect either eider species as they are not known to occur there. However, the shipping of diesel to this location could affect Steller's eiders if a spill occurred during the winter months. Larned (2006) found Steller's eiders wintering in areas throughout both eastern and western Cook Inlet such as Ursus Cove, Bruin Bay, Kamishak Bay near Douglas R. Shoals, and Iniskin Bay, as well along the Kenai Peninsula south into Kachemak Bay. These eiders were observed in nearshore environments in protected waters generally less than 10 meters deep, which reduces the potential for them to be affected by barges in the deeper shipping route.

Fuel barges and their potential impacts (discussed above under Alternative 2) would be eliminated from Kuskokwim Bay and River during the operations and maintenence phase, but cargo barge activity would be the same as in Alternative 2. The overall chance of adverse impacts would be reduced but some risk of collision and disturbance would still exist. Impacts associated with climate change would also be the same as those discussed for Alternative 2. Therefore, the direct and indirect effects of Alternative 3B on threatened and endangered birds would be minor.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to ESA-protected, candidate, and delisted bird species are described in Alternative 2 and would apply to Alternative 3B. No additional mitigation measures have been identified to reduce effects to ESA-protected, candidate, and delisted bird species.

3.14.2.1.7 ALTERNATIVE 4 – BIRCH TREE CROSSING PORT

The number of ocean barge trips under Alternative 4 would be the same as under Alternative 2, therefore, the potential direct and indirect impacts to both eider species would be the same as described under Alternative 2. Impacts associated with climate change would also be the same as those discussed for Alternative 2.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to ESA-protected, candidate, and delisted bird species are described in Alternative 2 and would apply to Alternative 4. No additional mitigation measures have been identified to reduce effects to ESA-protected, candidate, and delisted bird species.

3.14.2.1.8 ALTERNATIVE 5A – DRY STACK TAILINGS

The number of ocean barge trips under Alternative 5A would be the same as under Alternative 2, therefore the potential direct and indirect impacts to both eider species would be the same as described under Alternative 2. Impacts associated with climate change would also be the same as those discussed for Alternative 2.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to ESA-protected, candidate, and delisted bird species are described in Alternative 2 and would apply to Alternative 5A. No additional mitigation measures have been identified to reduce effects to ESA-protected, candidate, and delisted bird species.

3.14.2.1.9 ALTERNATIVE 6A – MODIFIED NATURAL GAS PIPELINE ALIGNMENT: DALZELL GORGE ROUTE

The number of ocean barge trips under Alternative 6A would be the same as under Alternative 2, therefore, the potential direct and indirect impacts to both eider species would be the same as described under Alternative 2. Impacts associated with climate change would also be the same as those discussed for Alternative 2.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to ESA-protected, candidate, and delisted bird species are described in Alternative 2 and would apply to Alternative 6A. No additional mitigation measures have been identified to reduce effects to ESA-protected, candidate, and delisted bird species.

3.14.2.1.10 IMPACT COMPARISON

A comparison of the impacts on listed eiders by alternative is presented in Table 3.14-6. The only project component that could affect listed eiders is the increase in ocean barge traffic; therefore Alternatives 2, 4, 5A, and 6, which would all have 26 ocean barge trips per year, all have the same potential for minor impacts on listed eiders. Under Alternative 3A there would be 17 ocean barge trips and under Alternative 3B there would be 12.

3.14.3 ESA-PROTECTED AND CANDIDATE MARINE MAMMAL SPECIES

3.14.3.1 AFFECTED ENVIRONMENT

ESA-listed marine mammals, including pinnipeds (seals, sea lions, and walruses) and cetaceans (whales, dolphins, and porpoises), occur within the proposed water-based transportation corridor in Kuskokwim Bay and the Kuskokwim River, in the eastern Bering Sea, and in upper Cook Inlet (Table 3.14-5). ESA-protected and candidate pinniped and cetacean species found within or adjacent to the Donlin Gold EIS Analysis Areas are described in detail below.

Table 3.14-5: ESA-Protected and Candidate Marine Mammal Species or Stocks in the Project Area

Common Name	Scientific Name	Stock	Kuskokwim Bay and River	Dutch Harbor-Bethel Barge Corridor	Cook Inlet near Beluga Power Plant and Barge Landing	ESA Status
Steller sea lion	*Eumetopias jubatus*	Western	X	X	X[1]	Endangered
Bearded seal	*Erignathus barbatus nauticus*	Beringia DPS	X			Threatened[2]
Ringed seal	*Phoca hispida hispida*	Arctic subspecies	X			Threatened
Pacific walrus	*Odobenus rosmarus divergens*		X			Candidate
Beluga whale	*Delphinapterus leucas*	Cook Inlet			X	Endangered
Humpback whale	*Megaptera novaeangliae*	Western North Pacific and Central North Pacific[3]		X		Endangered
Fin whale	*Balaenoptera physalus*	Northeast Pacific		X		Endangered
North Pacific right whale	*Eubalaena japonica*	Eastern North Pacific		X		Endangered
Northern sea otter	*Enhydra lutris kenyoni*	Southwest Alaska DPS		X		Threatened

Notes:

1 Steller sea lions may occasionally venture into upper Cook Inlet, but there are no terrestrial rookery or haulout sites north of Cape Douglas at the south end of Cook Inlet near Shelikof Strait (Fritz et al. 2013).
2 In 2014, a federal court vacated the listing of Beringia distinct population segment (DPS) bearded seals. Because the decision to vacate the listing is currently in appeals, the Beringia DPS is discussed in this section.
3 In 2015, NMFS proposed dividing the globally listed species into 14 DPSs, removing the current species-level listing, and relisting two DPSs as endangered and two DPSs as threatened. The proposed Western North Pacific DPS (which corresponds to the Western North Pacific stock discussed in this section) is proposed for relisting as threatened.

An X denotes presence in the area.

Table 3.14-6: Comparison of Impact-Causing Project Components by Alternative*

Impact-causing Project Component	Alternative 2 – Donlin Gold's Proposed Action	Alternative 3A – LNG-Powered Haul Trucks	Alternative 3B – Diesel Pipeline	Alternative 4 – Birch Tree Port	Alternative 5A – Dry Stack Tailings	Alternative 6A – Dalzell Gorge Route
Increased barge traffic	122 river trips / year 26 ocean trips / year from Dutch Harbor to Bethel	83 river trips / year 17 ocean trips / year from Dutch Harbor to Bethel	64 river trips / year 12 ocean trips / year through Cook Inlet to Tyonek	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
Risk of injury or mortality from collisions	Potential for minor impacts	Fewer ocean trips lowers potential for impacts	Fewest ocean trips = lowest potential for impacts	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
Conclusion	Minor impacts from increased ocean barge traffic	Reduced chance of minor impacts from increased ocean barge traffic due to 9 fewer ocean trips / year.	Least chance of minor impacts from increased ocean barge traffic because fuel barges and their potential impacts would be greatly reduced from Kuskokwim Bay and River. Cargo barge activity would be the same as in Alternative 2 and fuel barges would traverse eider wintering habitat in lower Cook Inlet.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.

Notes:

* The No Action Alternative would have no impacts on threatened and endangered bird species.

3.14.3.1.1 STELLER SEA LIONS (*EUMETOPIAS JUBATUS*): WESTERN STOCK

The two distinct stocks of Steller sea lions in U.S. waters are the eastern stock, which ranges from California to Prince William Sound, Alaska (east of Cape Suckling at 144°W), and the western stock, which includes animals at and west of Cape Suckling to eastern Russia (Loughlin 1997). Steller sea lions in the Bering Sea and western Alaska belong to the western stock.

In November 1990, NMFS listed Steller sea lions as threatened under the ESA (55 FR 49204). In 1997, the two stocks were formally recognized (Loughlin 1997) and the western population was listed as endangered (62 FR 24345), while the eastern stock retained a threatened classification (Allen and Angliss 2013). In October 2013, NOAA delisted the eastern stock, by removing it from the ESA list of threatened and endangered species. The endangered status for the western stock remains unchanged (NMFS 2013b).

Abundance estimates derive from aerial survey counts of non-pups (adults and juveniles) and aerial and ground-based pup counts. The 2013 total abundance estimate for the western stock of Steller sea lions in Alaska was 55,422 and the minimum abundance estimate was 48,676 animals (Allen and Angliss 2015). Populations east of Samalga Pass are generally increasing, yet those to the west are decreasing (Allen and Angliss 2015).

Steller sea lions occur across the North Pacific Ocean rim from Japan to southern California and breed on rookeries in the Russian Far East, Alaska, British Columbia, Oregon and California. Both stocks occur year around in Alaska, with peak numbers in late summer, fall, and winter (Allen and Angliss 2013).

Haulouts at Cape Newenham and Round Island are the largest in northern Bristol Bay and those closest to Kuskokwim Bay and the Donlin Gold EIS Analysis Area. Aerial surveys of the Cape Newenham Steller sea lion haulouts in 2006 yielded an average of 36 sea lions per survey during 8 surveys from January to December, with a peak count of 245 sea lions in mid-October. Steller sea lion counts at Cape Newenham are usually highest in late April to early May (MacDonald and Winfree 2008). In 2009, the high count for Steller sea lions at Cape Newenham was 136 on 15 May (Winfree 2010).

Critical habitat for Steller sea lions was designated in 1993 (58 FR 45269, August 27). This includes both aquatic and terrestrial zones. The aquatic zone in the range of the western stock includes areas within 20 nautical miles of designated rookeries and haulouts and key foraging areas in the Bogoslof district, Seguam Pass, and Shelikof Strait. Terrestrial critical habitat consists of areas landward within 3,000 feet of designated rookeries and haulouts and the air zone extends 3,000 feet above the terrestrial zone, measured vertically from sea level.

3.14.3.1.2 BEARDED SEALS (*ERIGNATHUS BARBATUS NAUTICUS*): BERINGIA DPS

The subspecies of bearded seals in the Pacific (*E. b. nauticus*) consists of an Okhotsk Distinct Population Segment (DPS) and a Beringia DPS. The Beringia DPS includes bearded seals in the Bering, Chukchi, Beaufort, and East Siberian seas (Cameron et al. 2010) and is the DPS of interest herein.

On December 28, 2012, NMFS issued a final determination to list the Beringia and Okhotsk DPSs of bearded seals as threatened under the ESA, with the final rule taking effect on February 26, 2013 (77 FR 76740). NMFS determined the Beringia DPS and the Okhotsk DPS are likely to

become endangered throughout all or a substantial portion of their ranges in the foreseeable future, based on the likelihood of current and future sea-ice habitat modification due to climate change and marine habitat modification due to ocean acidification. On July 25, 2014, a federal court issued a decision vacating NMFS' listing of the Beringia DPS of bearded seals as threatened. Therefore, at this time, Beringia DPS bearded seals are not listed as a threatened species under the ESA. NMFS has appealed the court's decision to the U.S. Court of Appeals for the Ninth Circuit. Since the decision is still in appeals, the discussion of Beringia DPS bearded seals remains in this section and impacts are analyzed (Section 3.14.3.2) as though the DPS is listed as threatened.

Although a reliable estimate is not currently available, the total Bering Sea bearded seal population could number approximately 125,000. Their broad distribution, sea-ice habitat, and cross-political boundaries hinder accurately assessing bearded seal abundance and trends (Cameron et al. 2010). Abundance and minimum population estimates are awaiting further analysis of data collected in 2012 and 2013 (Allen and Angliss 2015).

Bearded seals are an important subsistence species for Alaska Natives (Allen and Angliss 2013). The village of Kwethluk reported harvests of 11 bearded seals in 2010 (ADF&G 2013b).

Bearded seal distribution is circumpolar and closely associated with seasonal changes in sea ice. It is unusual for bearded seals in the Bering, Beaufort, and Chukchi seas to haul out on land. Most adult bearded seals move north from the Bering Sea into the Bering Strait and Beaufort and Chukchi seas with the retreating sea ice in late April through June, then spend summer to early fall along the southern edge of the Chukchi and Beaufort Sea pack ice. Wintering and whelping bearded seals are found in coastal leads of Norton and Kotzebue Sounds, the Gulf of Karaginsky, the Gulf of Anadyr, near Point Hope, and the Bering and Chukchi Seas, including Bristol and Kuskokwim bays (Coffing et al. 1998; Georgette et al. 1998). Bearded seals are occasionally seen during summer in the lower Kuskokwim River. During surveys in 2007 to 2008, one to two bearded seals were seen annually in the Tuntutuliak area between Helmick Point and Eek Island (RWJ 2008b, 2009, 2010b).

Bearded seals prey on benthic organisms, such as epifaunal and infaunal invertebrates and demersal fishes. Crabs, shrimp, and clams are major prey in the Bering, Chukchi, and Beaufort Seas (Antonelis et al. 1994; Dehn et al. 2007; Finley and Evans 1983; Kenyon 1962; Lowry et al. 1980).

3.14.3.1.3 RINGED SEAL (*PHOCA HISPIDA HISPIDA*): ARCTIC SUBSPECIES

The Arctic ringed seal is one of five recognized subspecies of ringed seal. It is further subdivided by geographical region: Greenland Sea and Baffin Bay; Hudson Bay; Beaufort and Chukchi seas; and the White, Barents and Kara seas (Allen and Angliss 2013). Arctic ringed seals of the Beaufort and Chukchi seas are those most likely to occur in the Kuskokwim Bay region.

On December 28, 2012, NMFS issued a final determination to list the Arctic, Okhotsk, and Baltic subspecies of ringed seal as threatened, and the Ladoga subspecies as endangered under the ESA, with the final rule taking effect on February 26, 2013 (77 FR 76706). The basis for the determination was the likelihood of sea-ice habitat modification due to climate change and marine habitat modification due to ocean acidification. NMFS proposes to designate critical habitat for the Arctic ringed seal in future rulemaking.

Current reliable population abundance and trend estimates are not available (Allen and Angliss 2013). Several factors, including distribution and ecology, make population assessments difficult. A recent estimate of at least 300,000 ringed seals in the Alaskan Beaufort and Chukchi seas is considered an underestimate (Bengtson et al. 2005; Frost et al. 2004). The total population of ringed seals in the Beaufort and Chukchi seas may be closer to one million when accounting for seals inhabiting pack ice and the eastern Beaufort and Amundson Gulf areas (Bengtson et al. 2005; Frost et al. 2004). Reliable abundance and minimum population estimates are forthcoming, pending further analysis of data collected in comprehensive and synoptic aerial surveys of ice-associated seals in the Bering and Okhotsk Seas in 2012 and 2013 (Allen and Angliss 2015).

Ringed seals are an important subsistence resource for Alaska Native communities (Allen and Angliss 2013). Recent harvest reports for Kwethluk show 30 ringed seals taken in 2010 (ADF&G 2013b).

Ringed seals are circumpolar and strongly ice-associated. The seasonality of ice cover dictates movements, feeding, and reproductive behavior (Kelly et al. 2010). The Arctic subspecies usually only hauls out on sea ice for resting, pupping, and molting (Kelly and Quakenbush 1990; Kelly et al. 2010). Ringed seals are found throughout the Beaufort, Chukchi, and Bering seas, including as far south as Bristol Bay in years of extensive ice coverage (Allen and Angliss 2013).

3.14.3.1.4 PACIFIC WALRUS (*ODOBENUS ROSMARUS DIVERGENS*)

The walrus is represented by two subspecies, the Atlantic walrus (*O. r. rosmarus*) and the Pacific walrus (*O. r. divergens*) (FWS 2013a). The Pacific walrus consists of a single population that ranges throughout continental shelf waters of the Bering and Chukchi seas (Fay 1982).

Total population size is unknown. In 2006, part of the spring range in the Bering Sea pack ice was surveyed using a combination of thermal imaging and aerial photography. The resulting estimate of 129,000 walruses represents a partial and minimum population estimate, since only about half of the potential walrus habitat was surveyed (Garlich-Miller et al. 2011; Speckman et al. 2011).

In 2011, the FWS published a notice of a 12-month finding on a petition to list the Pacific walrus as threatened or endangered under the ESA (76 FR 7634). Although considered warranted, listing was precluded by higher priority actions to list other species. Upon publication of the notice, the Pacific walrus was added to the FWS list of candidate species. Factors considered primary threats to Pacific walrus in the foreseeable future and the reason for the determination are impacts of sea ice loss in summer and fall and the subsistence harvest.

Pacific walrus is an important subsistence species to Alaska Native communities. The average annual harvest in the U.S. for 2006-2010 was 1,782, most of which were taken in the Bering Strait region (FWS 2013a). The Kuskokwim River communities of Akiak and Kwethluk reported harvests of one and two walrus, respectively, in 2010 (ADF&G 2013a, 2013b).

Pacific walrus distribution varies seasonally and by age and sex classes. Walruses congregate in the Bering Sea pack ice adjacent to areas with open water during the breeding season from January to March (Fay et al. 1984). Breeding aggregations are common southwest of St. Lawrence Island, south of Nunivak Island and south of the Chukotka Peninsula in the Gulf of

Anadyr (Speckman et al. 2011). Adult females and juveniles and young migrate through the Bering Strait to summer feeding areas over the continental shelf in the Chukchi Sea as Bering Sea ice breaks up in spring (Garlich-Miller et al. 2011). Most adult males remain in the Bering Sea and forage from coastal haul outs during the ice free season.

Coastal haulouts in Bristol Bay (e.g., Cape Newenham, Cape Peirce, Hagemeister Island, and Round Island) are among the most consistently used by adult males in the Bering Sea during summer. Cape Newenham, Cape Peirce, and Hagemeister Island are those nearest to Kuskokwim Bay. Walruses have been observed at Cape Peirce and Cape Newenham in northwest Bristol Bay since the early 1980s (Garlich-Miller et al. 2011). Annual peak counts of walruses on Cape Peirce declined from 1985 to 2012 (Winfree 2013). Hagemeister Island had the largest peak counts of hauled out walrus from 2005 to 2012, including more frequent and longer time periods of use. Periods of use for Cape Peirce and Hagemeister Island in 2012 were June to November and May to November, respectively. Since 2004, the peak annual haul-out at Cape Peirce occurred during October-December (Winfree 2013). Summertime use of Cape Newenham by walruses has been low and irregular since the late 1990s (MacDonald and Winfree 2008). No walruses were observed at Cape Newenham from 2007 to 2012 (Winfree 2013). Peak counts in the Bristol Bay walrus haul-out complex declined since 1985, while numbers using different sites varied considerably (Winfree 2013). As evidenced by tagging studies, at least some walruses moved between Bristol Bay haulout sites and Kuskokwim Bay between September and December. None occurred in Kuskokwim Bay in January (Jay and Hills 2005).

3.14.3.1.5 BELUGA WHALE (*DELPHINAPTERUS LEUCAS*): COOK INLET STOCK

The five stocks of beluga whales recognized in Alaska waters are the Beaufort Sea, eastern Chukchi Sea, eastern Bering Sea, Bristol Bay, and Cook Inlet stocks (Allen and Angliss 2013). The Cook Inlet stock is the only one listed as endangered.

The NMFS conducted aerial surveys of Cook Inlet beluga whales annually from 1993 to 2012; biennial surveys began in 2014 (Shelden et al. 2015). Population estimates, derived from aerial surveys corrected for whale sightability, showed a nearly 50 percent decline in the Cook Inlet beluga population between 1994 and 1998. Estimates ranged from a high of 653 belugas in 1994 to a low of 278 in 2005. The estimated abundance of 340 belugas in 2014 is within the range of estimates from the previous 10 survey years (312–375). The population increased since the low in 2005, yet still shows an overall declining trend. The 10-year (2004-2014) population trend is -0.4 percent and the overall trend since management of the hunt began in 1999 is -1.3 percent (Shelden et al. 2015). Despite restrictions on Alaskan Native subsistence harvest of Cook Inlet belugas, the population is not recovering (Hobbs and Shelden 2008).

The Cook Inlet beluga population was listed as depleted under the MMPA in 2000 and listed as endangered under the ESA in October 2008 (73 FR 62919). A recovery plan is in preparation (75 FR 4528).

Beluga whales occur in Cook Inlet year-round, but locations and movements vary seasonally. Most available information on seasonal movements is based on 14 whales outfitted with satellite transmitters in upper Cook Inlet in the summers of 2000-2002 (Hobbs et al. 2005). In general, belugas concentrate in river mouths or bays during summer and early fall, disperse into the middle inlet in late autumn and early winter after seasonal salmon runs at river mouths

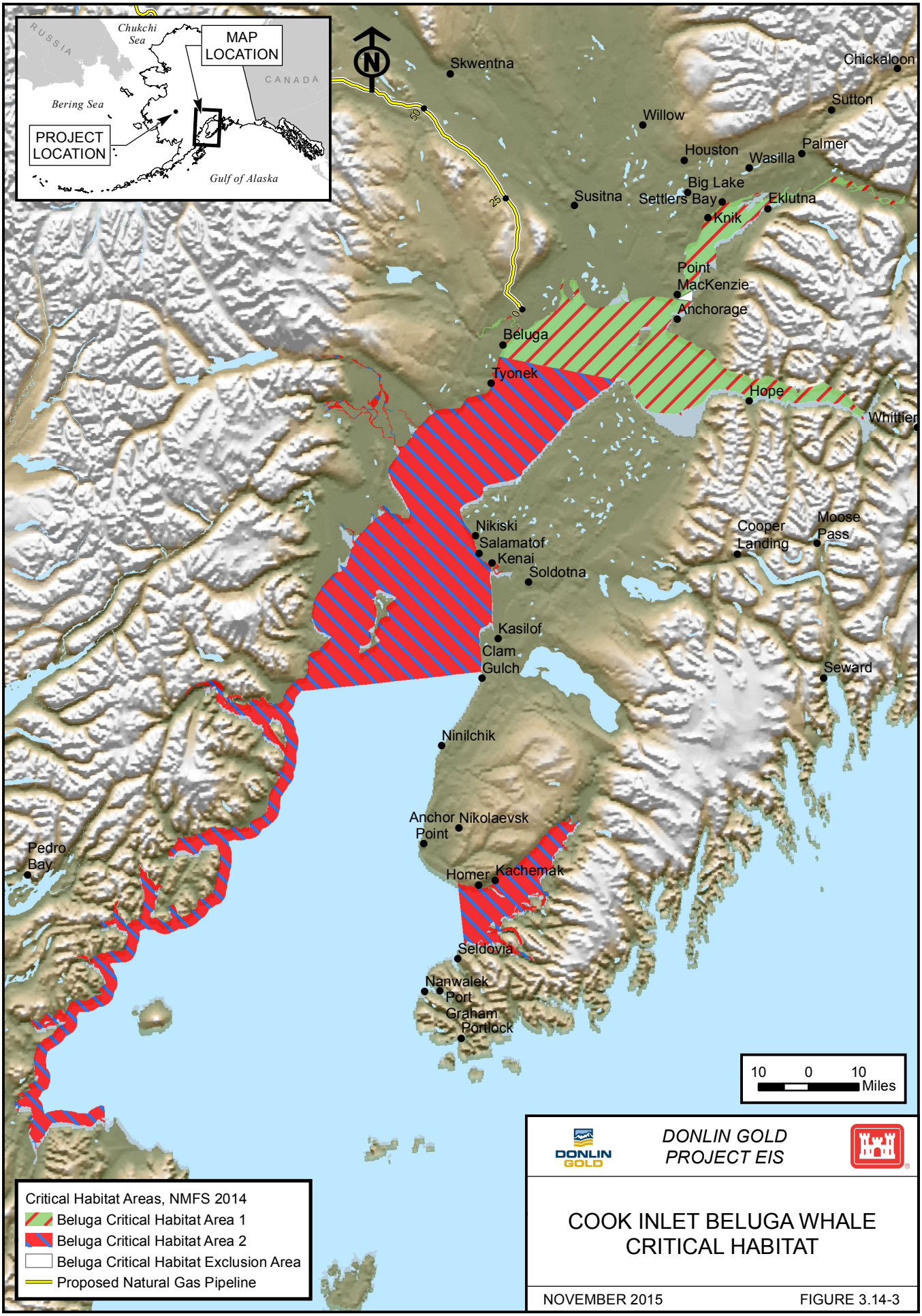
end, and disperse to pursue prey in mid- or bottom-waters farther offshore during winter (Hobbs et al. 2005). Belugas regularly occur in upper Cook Inlet starting in late April or early May, coincident with eulachon runs in the Susitna River and Twenty Mile River in Turnagain Arm. (NMFS 2008). During summer, belugas are found in the Susitna and Little Susitna Rivers and smaller streams along the west side of the inlet, where they pursue eulachon and king salmon in the early season and coho salmon later in the summer (NMFS 2008). Traditional knowledge of beluga whales, derived from interviews with Tyonek residents, includes observed feeding at the mouths of the Beluga River, McArthur River, and Susitna River (Stephen R. Braund & Associates and Huntington Consulting 2011).

Monthly movements of tagged whales were as follows: In August, they concentrated in Knik Arm near Eagle River, along the Little Susitna River Delta, or near Fire Island, Point Possession, and the tidal estuary of Turnagain Arm. Belugas used Knik Arm in September, but also increased use of the Susitna Delta, Turnagain Arm, and Chickaloon Bay, and the west coast of the upper inlet to the Beluga River. In October, belugas spread along coastal areas as far south as Chinitna and Tuxedni Bays. Use of Knik Arm, Turnagain Arm, and Chickaloon Bay continued in October. November distribution was similar to September with more widespread use of Knik Arm and Chickaloon Bay. Whales moved offshore in December and were broadly dispersed throughout the entire upper inlet through January, although with minimal use of Knik or Turnagain Arms. Whales ranged most broadly in February and March, with little use of upper inlet areas and widespread use of the central offshore waters (Hobbs et al. 2005).

NMFS issued a final rule designating critical habitat for Cook Inlet beluga whales in April 2011 (76 FR 20180). The critical habitat encompasses 3,016 square miles (7,800 square km) of marine and estuarine environments considered to be essential for the survival of Cook Inlet beluga whales. Critical Habitat Area 1 includes important calving and foraging habitat where belugas concentrate from spring through fall. Critical Habitat Area 2 includes areas subject to less concentrated use in spring and summer, but known fall and winter use by Cook Inlet belugas. The boundary separating the two critical habitat areas lies between Beluga and Tyonek, with Beluga inside Critical Habitat Area 1 and Tyonek in the northern end of Critical Habitat Area 2 (Figure 3.14-3).

3.14.3.1.6 HUMPBACK WHALE (*MEGAPTERA NOVAEANGLIAE*): WESTERN NORTH PACIFIC AND CENTRAL NORTH PACIFIC STOCKS

The three humpback whale stocks in the North Pacific are the California/Oregon/Washington and Mexico stock, which migrates seasonally between Central America and Mexico and California to southern British Columbia; the Central North Pacific stock, which migrates between the Hawaiian Islands and northern British Columbia/Southeast Alaska, the Gulf of Alaska, and the Bering Sea/Aleutian Islands; and the Western North Pacific stock, which migrates between Asia and Russia and the Bering Sea/Aleutian Islands (Allen and Angliss 2013). Humpback whales from the Western and Central North Pacific stocks mix somewhat on summer feeding grounds from British Columbia through the central Gulf of Alaska and into the Bering Sea. The Dutch Harbor to Bethel barge corridor traverses part of the area of overlap of these two stocks.


MAP LOCATION
PROJECT LOCATION
RUSSIA
Chukchi Sea
CANADA
Bering Sea
Gulf of Alaska
N
Skwentna
Willow
Chickaloon
Sutton
Houston
Wasilla
Palmer
Big Lake
Susitna
Settlers Bay
Eklutna
Knik
Point MacKenzie
Anchorage
Beluga
Tyonek
Hope
Whittier
Nikiski
Salamatof
Kenai
Soldotna
Cooper Landing
Moose Pass
Kasilof
Clam Gulch
Seward
Ninilchik
Anchor Point
Nikolaevsk
Pedro Bay
Homer
Kachemak
Seldovia
Nanwalek
Port Graham
Portlock
50
25
0
10 0 10
Miles
Critical Habitat Areas, NMFS 2014
Beluga Critical Habitat Area 1
Beluga Critical Habitat Area 2
Beluga Critical Habitat Exclusion Area
Proposed Natural Gas Pipeline
DONLIN GOLD
DONLIN GOLD PROJECT EIS
COOK INLET BELUGA WHALE CRITICAL HABITAT
NOVEMBER 2015
FIGURE 3.14-3

The abundance estimate of 19,594 humpback whales in the North Pacific (Calambokidis et al. 2008) was revised to 21,063 by Barlow et al. (2011) using capture-recapture methods and simulation models to estimate biases. Estimated abundance for the Aleutian Islands and Bering Sea ranges from 2,889 to 13,594 humpback whales. Since their ranges overlap, this estimate likely includes whales from both the western and central North Pacific stocks (Allen and Angliss 2015). Uncorrected abundance estimates of humpback whales on the eastern Bering Sea shelf during June-July 2002, 2008, and 2010 were 231, 436, and 675, respectively (Friday et al. 2013).

During summer, most of the central North Pacific humpback whale stock is in the Aleutian Islands, Bering Sea, Gulf of Alaska, and Southeast Alaska/northern British Columbia. High densities of humpback whales commonly occur in the eastern Aleutian Islands along the north side of Unalaska Island and along the Bering Sea shelf edge and break to the north toward the Pribilof Islands (Zerbini et al. 2006; Allen and Angliss 2013). Estimated encounter rates for humpback whales were highest in the coastal domain. Humpbacks consistently concentrate in coastal waters north of Unimak Pass and along the Alaska Peninsula in areas of nutrient upwelling and potential prey aggregation (Friday et al. 2013). Humpback whales tagged near Unalaska Bay in the summers of 2007-2010 revealed individually variable movement patterns. Some remained within 50-60 km of Unalaska Bay, while others traveled substantial distances. The variability was most likely influenced by inter-annual productivity and prey abundance (Zerbini et al. 2011).

3.14.3.1.7 FIN WHALE (*BALAENOPTERA PHYSALUS*): NORTHEAST PACIFIC STOCK

Although the International Whaling Commission recognizes a single North Pacific stock of fin whales, NMFS recognizes three stocks in U.S. Pacific waters for management purposes: Alaska (Northeast Pacific); California/ Oregon/Washington; and Hawaii (Allen and Angliss 2013). The Northeast Pacific stock is the only one that occurs in the Donlin Gold Project area.

There are currently no reliable abundance estimates for the entire Northeast Pacific stock of fin whales. Surveys in the Bering Sea and coastal waters from southcentral Alaska to the central Aleutian Islands provide the only data from which estimates could be derived. A provisional estimate of 5,700 fin whales west of the Kenai Peninsula is considered a minimum for this stock, since surveys only covered a small part of the entire range (Allen and Angliss 2015). Uncorrected abundance estimates of fin whales on the eastern Bering Sea shelf during June-July 2002, 2008, and 2010 were 419, 1368, and 1061, respectively (Friday et al. 2013). Zerbini et al. (2006) estimated an annual rate of increase of 4.8 percent from 1987 through 2003 for fin whales in coastal waters south of the Alaska Peninsula.

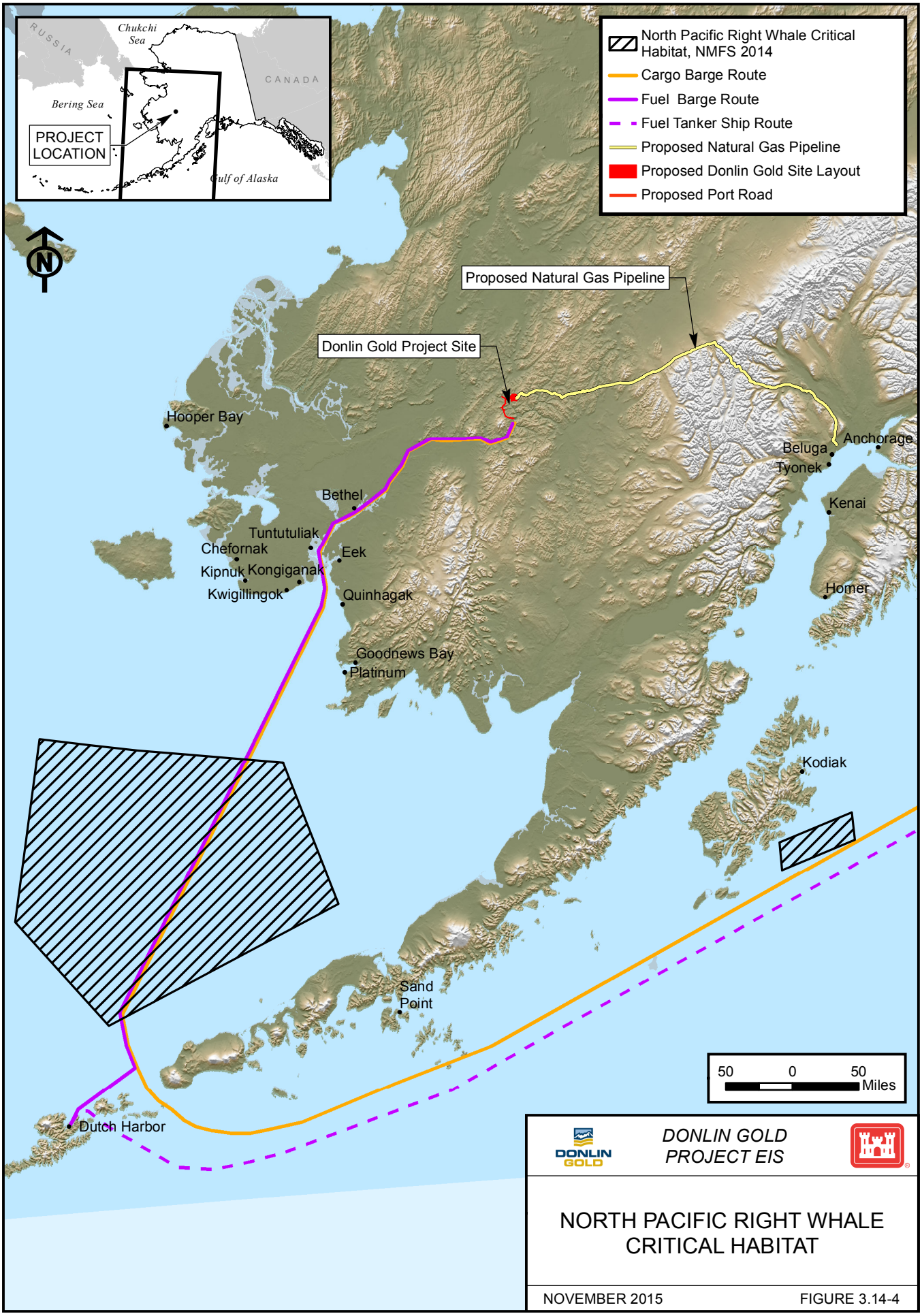
Fin whales occur throughout the North Pacific from Central Baja California to the Chukchi Sea (Mizroch et al. 2009; Nasu 1974; Rice 1974). Documented occurrence in Alaskan waters in summer and fall is primarily in the Gulf of Alaska and Bering Sea (Mizroch et al. 2009). Little is known of their migratory movements, although there is evidence of fin whales in high-latitude areas year-round (Mizroch et al. 2009; NMFS 2010b; Stafford et al. 2007). Fin whales commonly occur along frontal zones or mixing zones, corresponding with the 200 m (656 ft) isobath (Nasu 1974). In the eastern Bering Sea, fin whales are broadly distributed in the outer domain and slope (Friday et al. 2013). Primary prey of fin whales in the North Pacific includes euphausiids (krill), large copepods, and schooling fish such as herring, walleye pollock, and capelin (Nemoto 1970; Kawamura 1982).

3.14.3.1.8 NORTH PACIFIC RIGHT WHALE (*EUBALAENA JAPONICA*): EASTERN NORTH PACIFIC STOCK

The North Pacific right whale is critically endangered due to heavy exploitation from 19th century commercial whaling and illegal Soviet whaling in the 1960s. It is considered one of the rarest and most endangered large whales in the world (Allen and Angliss 2013; NMFS 2013c). Recent genetic analyses show lack of genetic diversity, an extremely low effective population size, and apparent isolation of eastern and western Pacific populations, indicating that right whales are in serious danger of immediate extirpation from the eastern North Pacific (LeDuc et al. 2012). The species is exceedingly rare and is the world's smallest whale population for which a population estimate exists (Wade et al. 2011). Using photo-identification and genetic mark-recapture techniques, 31 and 28 individuals, respectively, were estimated to occur in the Bering Sea and Aleutian Islands. Although this may represent a Bering Sea sub-population, available data indicate that the entire eastern North Pacific population is likely not much larger (Wade et al. 2011).

Recent sightings, satellite telemetry, and acoustic detections confirm that the southeastern Bering Sea is an important area for right whales from late spring to late fall (Shelden et al. 2005; Munger et al. 2008; Zerbini et al. 2015; Baumgartner et al. 2013). Although occasionally seen and acoustically detected elsewhere, the southeast Bering Sea is the only area where right whales have been seen consistently since the 1980s (Shelden et al. 2005). Long-term monitoring of calls show right whales intermittently occur on the southeast Bering Sea middle shelf between May and December, with frequency and duration of occurrence greatest in July–October. Right whales may also occasionally occur over the Bering Sea slope (Munger et al. 2008). All sightings in the Bering Sea since 1996 have been on the southeastern Bering Sea shelf (Wade et al. 2011). The availability of the copepod, *Calanus marshallae*, the primary prey of North Pacific right whales on the southeastern Bering Sea shelf during the summer, is the main reason North Pacific right whales return annually to the area (Baumgartner et al. 2013).

In July 2006, NMFS published a final rule designating critical habitat for the northern right whale in the Gulf of Alaska and the southeastern Bering Sea, which comprises approximately 95,200 square km of marine habitat (71 FR 38277). When the North Pacific right whale was listed as a separate, endangered species in 2008, the two areas previously designated as critical habitat for the northern right whale were re-designated as critical habitat for the North Pacific right whale (73 FR 19000) (Figure 3.14-4). Satellite telemetry studies conducted in 2004, 2008 and 2009 show that the tagged whales remained within the Critical Habitat in the Bering Sea, providing further evidence that the Critical Habitat encompasses important range of the population during the feeding season (Zerbini et al. 2015). Analysis of sonobuoy recordings from the summers of 2008-2011 revealed a high level of site fidelity in the northeastern part of the Critical Habitat. Long-term acoustic recorders located across the Bering Sea shelf also confirm this site fidelity within the northeastern Critical Habitat, with seasonal presence extending from July through January (Clapham et al. 2012). The proposed Dutch Harbor to Bethel barge corridor traverses the designated Critical Habitat in the Bering Sea.


North Pacific Right Whale Critical Habitat, NMFS 2014
Cargo Barge Route
Fuel Barge Route
Fuel Tanker Ship Route
Proposed Natural Gas Pipeline
Proposed Donlin Gold Site Layout
Proposed Port Road
RUSSIA
Chukchi Sea
CANADA
Bering Sea
PROJECT LOCATION
Gulf of Alaska
N
Proposed Natural Gas Pipeline
Donlin Gold Project Site
Hooper Bay
Bethel
Tuntutuliak
Chefornak
Eek
Kipnuk
Kongiganak
Kwigillingok
Quinhagak
Goodnews Bay
Platinum
Beluga
Tyonek
Anchorage
Kenai
Homer
Kodiak
Sand Point
Dutch Harbor
50 0 50
Miles
DONLIN GOLD
DONLIN GOLD PROJECT EIS
NORTH PACIFIC RIGHT WHALE CRITICAL HABITAT
NOVEMBER 2015
FIGURE 3.14-4

3.14.3.1.9 NORTHERN SEA OTTER (*ENHYDRA LUTRIS KENYONI*): SOUTHWEST ALASKA DPS

Three genetically and geographically distinct population segments (DPSs) of sea otters occur in Alaska: the Southwest Alaska DPS, which ranges from the Bering Sea, Aleutian Islands, and Alaska Peninsula to the western shore of Cook Inlet; the Southcentral Alaska DPS, which ranges from Cook Inlet east to Cape Yakataga; and the Southeast Alaska DPS, which extends from Cape Yakataga to the southern boundary of Alaska (Gorbics and Bodkin 2001). Only the Southwest Alaska DPS occurs in the Donlin Gold Project area, specifically, in the Unalaska Island (Dutch Harbor) portion of the transportation corridor. It is also the only DPS in Alaska listed under the ESA.

Sea otter populations in southwest Alaska declined by more than 50 percent since the mid-1980s, and there is no evidence of recovery. Despite this, the overall population trend for the Southwest Alaska DPS appears to have stabilized (FWS 2014b). The most recent survey of the Aleutian Islands occurred in 2000 and resulted in an adjusted estimate of 8,742 sea otters (Doroff et al. 2003). Aerial survey counts of sea otters on Unalaska and Sedanka Islans were 554 and 374 in 1992 and 2000, respectively (Doroff et al. 2003). The adjusted estimate for entire range from Kamishak Bay to the Aleutian Islands is 54,771 (FWS 2014b).

The FWS published the final rule designating critical habitat for the Southwest Alaska DPS in 2009 (74 FR 51988). Primary defining features of critical habitat are: shallow, rocky areas where marine predators are not likely to forage; nearshore waters within 100 m (328.1 feet) of the mean high tide line that may provide protection from marine predators; kelp forests that provide marine predator protection; and adequate prey availability and quality. The five management units designated as critical habitat are: Western Aleutian Unit; Eastern Aleutian Unit; South Alaska Peninsula Unit; Bristol Bay Unit; and Kodiak, Kamishak, Alaska Peninsula Unit.

3.14.3.1.10 CLIMATE CHANGE

Climate change is affecting resources in the EIS Analysis area and trends associated with climate change are projected to continue into the future. Section 3.26.3 discusses climate change trends and impacts to key resources in the physical and biological environments including atmosphere, water resources, permafrost, and vegetation. Current and future effects on marine mammals are tied to changes in physical resources (discussed in Section 3.26.4, Climate Change).

3.14.3.2 ENVIRONMENTAL CONSEQUENCES

Table 3.14-7 indicates the mechanisms by which effects of the alternatives on ESA-listed marine mammals can be systematically assessed. This table summarizes criteria for determining the impact level based on intensity (magnitude), duration, extent, and context. Criteria were developed for biological resources, and can be applied to multiple species, including marine mammals. In general, available data are insufficient for quantitative analyses of effects on marine mammals; criteria and determinations are, therefore, necessarily more qualitative. Effects summaries per component and effect inform summary impact levels that range from negligible to major; no effect is also possible.

Table 3.14-7: Impact Criteria for Effects on Marine Mammals

Type of Effect	Impact Component	Effects Summary		
Behavioral Disturbance	Magnitude or Intensity	**Low**: Changes in behavior due to project activity may not be noticeable; animals remain in the vicinity.	**Medium**: Noticeable change in behavior due to project activity that may affect reproduction or survival of individuals.	**High**: Acute or obvious/abrupt change in behavior due to project activity; life functions are disrupted; animal populations are reduced in the EIS Analysis Area.
	Duration	**Temporary**: Behavior patterns altered infrequently, but not longer than the span of project construction and would be expected to return to pre-activity levels after actions causing impacts were to cease.	**Long-term**: Behavior patterns altered for several years and would return to pre-activity levels in the long-term (from the end of construction through the life of the mine, and up to 100 years) after actions causing impacts were to cease.	**Permanent**: Change in behavior patterns would continue even if actions that caused the impacts were to cease; behavior not expected to return to previous patterns.
	Geographic Extent	**Local**: Impacts limited geographically; limited to vicinity of the Project Area or a subset.	**Regional**: Affects resources beyond a local area, potentially throughout the EIS Analysis Area.	**Extended**: Affects resources beyond the region or EIS Analysis Area.
	Context	**Common**: Affects usual or ordinary resources in the EIS Analysis Area; resource is not depleted in the locality or protected by legislation.	**Important**: Affects depleted species within the locality or region, or resources proposed as candidates or listed as threatened under the ESA but whose populations are currently stable, or the portion affected is not a large percentage of the population.	**Unique**: Affects species listed as endangered under the ESA, or those listed as threatened or proposed for listing under the ESA with small or declining populations.

Table 3.14-7: Impact Criteria for Effects on Marine Mammals

Type of Effect	Impact Component	Effects Summary		
Habitat Alterations	Magnitude or Intensity	**Low**: Changes in resource character or quantity may not be measurable or noticeable.	**Medium**: Noticeable changes in resource character and quantity.	**High**: Acute or obvious changes in resource character and quantity.
	Duration	**Temporary**: Resource would be reduced infrequently but not longer than the span of 1 year and would be expected to return soon to pre-activity levels.	**Long-term**: Resource would be reduced for up to the life of the projectin the long-term (from the end of construction through the life of the mine, and up to 100 years).	**Permanent**: Resource would not be anticipated to return to previous character or levels.
	Geographic Extent	**Local**: Impacts limited geographically; limited to vicinity of the Project Area.	**Regional**: Affects resources beyond a local area, potentially throughout the EIS Analysis Area.	**Extended**: Affects resources beyond the region or EIS Analysis Area.
	Context	**Common**: Affects usual or ordinary habitat in the EIS Analysis Area; habitat is not depleted in the locality or protected by legislation.	**Important**: Affects depleted habitat within the locality or region or habitat protected by legislation.	**Unique**: Affects habitat protected by ESA legislation, such as designated critical habitat.
Injury and Mortality	Magnitude or Intensity	**Low**: No noticeable incidents of injury or mortality; population level effects not detectable.	**Medium**: Incidents of injury or mortality are detectable; populations remain within normal variation.	**High**: Incidents of mortality or injury create population-level effects.
	Duration	**Temporary**: Events with potential for mortality or injury would occur for a brief, discrete period lasting less than one year, or up to the duration of the construction period.	**Long-term**: Events with potential for mortality or injury would continue for up to the life of the project.	**Permanent**: Potential for mortality or injury would persist after actions that caused the disturbance ceased.
	Geographic Extent	**Local**: Impacts would be limited to vicinity of the Project Area or subsets.	**Regional**: Impact would occur beyond a local area, potentially throughout the EIS Analysis Area.	**Extended**: Impacts would occur beyond the region or EIS Analysis Area.

Table 3.14-7: Impact Criteria for Effects on Marine Mammals

Type of Effect	Impact Component	Effects Summary		
Injury and Mortality (cont'd)	Context	**Common**: Affects usual or ordinary resources in the EIS Analysis Area; resource is not depleted in the locality or protected by legislation.	**Important**: Affects depleted species within the locality or region, or resources proposed as candidates or listed as threatened under the ESA but whose populations are currently stable, or the portion affected is not a large percentage of the population.	**Unique**: Affects species listed as endangered under the ESA, or those listed as or threatened or proposed for listing under the ESA with small or declining populations.

Impacts are described below in terms appropriate for ESA impact discussions, being careful not to draw conclusions that should be the purvue of the Section 7 consultation.

3.14.3.2.1 ALTERNATIVE 1 – NO ACTION

Under the No Action Alternative, there would be no mine site development, no transportation facilities, and no natural gas pipeline. There would, therefore, be no project-related impacts to threatened or endangered marine mammals in the Donlin Gold Project proposed Project Area.

3.14.3.2.2 ALTERNATIVE 2 – DONLIN GOLD'S PROPOSED ACTION

Potential Impacts

The marine and riverine portions of the transportation facilities and barging and nearshore activity in upper Cook Inlet are the Donlin Gold Project components most likely to impact threatened or endangered marine mammals. Potential direct and indirect effects include injury or mortality through vessel strikes, behavioral disturbance or displacement due to noise, and habitat changes and/or injury or mortality through contamination from fuel or chemical spills. Effects of barge trips south of Dutch Harbor or Cook Inlet are not analyzed because they are a small fraction of the typical shipping traffic to and from the Dutch Harbor vicinity and are within the range of variability of that shipping background. This section includes potential effects common to all action alternatives; more specific analysis relevant to the project components and phases follow below.

As described in Section 3.14.1, Section 7 of the ESA requires all federal agencies to consult with the FWS and/or NMFS when any action undertaken, funded, or permitted through the agency may affect an ESA-listed species or critical habitat. If the proposed action may affect listed species, the agency may prepare a Biological Assessment, or accept an applicant-prepared one, to aid in determining the project's effects on listed species. Concurrent with the development of this Draft EIS, the Corps approved draft Biological Assessments for submission to the FWS and NMFS (see Appendix O). The geographic scope of the Biological Assessments includes the barge corridor from Seattle, Washington to Dutch Harbor, Alaska, which is not included in the

EIS Analysis Area. Effects determinations in the Biological Assessments for species included within the scope of the EIS Analysis Area range from no effect to not likely to adversely affect. Refer to Appendix O for further details. The draft Biological Assessments are subject to FWS and NMFS review.

Potential Injury and Mortality from Vessel Strikes

Marine mammal-ship collisions occur worldwide, with effects ranging from survivable lacerations to serious injury or mortality from propeller cuts to blunt force trauma. Vessel speed is a key determinant of the frequency and severity of ship strikes. The potential for collisions with marine mammals increases with ships traveling at speeds of 15 knots and greater (Laist et al. 2001; Vanderlaan and Taggart 2007). The potential for vessel strikes in the Kuskokwim River and at the mouth of the river would be minimized by the relatively slow speed at which tugs and barges are expected to travel in that portion of the Project Area. River barges for cargo travelling to or from the Bethel Port are expected to average 4 knots upriver while loaded and 10 knots downriver when empty. Similarly, the average speed of fuel barges would be 3.5 knots while loaded travelling upriver and 10 knots downriver and empty. The transit speed of the fuel and cargo tugs and barges travelling between Dutch Harbor and the mouth of the Kuskokwim River should be in the 10 knot (or slower) range and, thus, below the speed threshold above which the potential for and severity of collisions increase. They may still be of concern for slower moving species such as the North Pacific right whale. The barge corridor traverses designated Bering Sea critical habitat for this highly endangered species. Telemetry and acoustic studies indicate that tagged right whales showed a high level of site fidelity to the northeast portion of this area for feeding during summer months (Clapham et al. 2012; Zerbini et al. 2015), which includes the area through which the barge corridor passes. Although the designated critical habitat encompasses the area of recent historical use by right whales, distribution tends to be clustered and influenced by prey availability and not evenly spread across the critical habitat. Collisions with vessels are considered a potential threat to North Pacific right whales (NMFS 2013c). Available evidence suggests that impacts of ships on North Pacific right whales are currently low. This may be due to limited vessel activity in North Pacific right whale habitat or low detectability of collisions due to little to no observer coverage and an offshore distribution of North Pacific right whales (NMFS 2013c). Humpback whales and fin whales are also known to be susceptible to ship strikes, including by large, ocean-going vessels (Jensen and Silber 2003). There have, thus far, been no reported whale-vessel collisions in the Bering Sea or Kuskokwim River portions of the EIS Analysis Area (Neilson et al. 2012). Vessel strikes are rarely observed in pinnipeds in the Donlin Gold EIS Analysis Areas, so not considered likely impacts. Vessel strikes are a known cause of death in all three stocks of northern sea otters, but in most cases, contributing factors (e.g., disease, biotoxin exposure) incapacitated the animal, leaving it vulnerable to ship strike (FWS 2014b).

Potential Impacts of Noise

The three types of potential impacts of noise on marine mammals are non-auditory injury, auditory injury, and behavioral (e.g., avoidance, changes in foraging or social behavior) (Richardson et al. 1995; Southall et al. 2007). NMFS developed acoustic criteria that estimate at what received sound levels these impacts would occur from different types of sounds. NMFS currently uses a sound threshold of 160 decibels referenced to 1 micro Pascal (dB re 1 µPa rms) for impulsive noises and 120 dB re 1 µPa rms for continuous, non-impulsive sounds to

determine the onset of behavioral harassment for marine mammals (70 FR 1871). Impulsive sounds are transient, brief (less than one second), broadband, and typically rise and decay rapidly. Non-impulsive sounds can be broadband, narrowband, tonal, brief or prolonged, continuous or intermittent, and generally lack the high peak pressure and rapid rise time of impulsive sounds (NOAA 2015a). Currently used acoustic thresholds for received sound levels above which hearing impairment or other injury could potentially occur are 180 and 190 dB re 1 µPa (rms) for cetaceans and pinnipeds, respectively (NOAA 2015a). NOAA is in the process of developing revised guidance for assessing effects of anthropogenic sounds on marine mammals under the jurisdiction of the NMFS, including updating acoustic threshold levels for assessing auditory injury (NOAA 2015a).

Behavioral impacts on marine mammals from vessel traffic noise and dock and port construction noise are the noise-related impacts most likely to occur. In-water noise from vessels, sonar, construction, or other sources could interfere with – or mask – marine mammal communication or cause deflection from or avoidance of an area (Clark et al. 2009; David 2006; Norman 2011; Tougaard et al. 2009; Würsig et al. 2000). Communication masking by ship noise is difficult to quantify, but studies off the coast of New England suggest that masking effects in high traffic areas are more severe for right whales than for singing fin or humpback whales, since right whale calls are not as loud as fin and humpback songs (Clark et al. 2009). Under moderate noise levels, North Atlantic right whales increase call amplitude coincident to increasing background noise levels (Parks et al. 2010). In addition, there is evidence that exposure to low-frequency ship noise induces chronic stress in North Atlantic right whales (Rolland et al. 2012). Direct injury from noise is not likely, as sound levels are all expected to be well below injury thresholds.

Marine mammals have variable reactions to vessel activity and noise. Whales react less dramatically to the noise from slow-moving vessels than to faster and/or erratic vessel movements and engine noises. Some species tolerate slow-moving vessels within several hundred yards, especially if there are no sudden changes in direction or engine speed (Heide-Jorgensen et al. 2003; Richardson et al. 1995; Wartzok et al. 1989). Behavioral responses to vessels vary by vessel size, speed, distance, and whale species, but may include avoidance, such as swimming away from the vessel, or changes in diving and surfacing behavior (Finley et al. 1990; Norman 2011). Pinnipeds are sensitive both to sound in air and in water and may be susceptible to loud noise when they are in the water or hauled out on land (Kastak et al. 2005). Reactions of walrus in the water to passing vessels in the Chukchi Sea ranged from none to swimming away (Haley et al. 2010). Most available information on reactions of pinnipeds to boats concern pinnipeds hauled out on land or ice. Human-caused disturbances of hauled-out seals usually result in flushing animals into the water (Jansen et al. 2006; Suryan and Harvey 1999). The amount of time before haulout behavior returns to pre-disturbance levels varies (Kucey 2005). In places where boat traffic is heavy, seals may habituate to vessel disturbance (e.g., Bonner 1982; Jansen et al. 2006). Few data exist on hearing in sea otters. Auditory measurements obtained from a single captive sea otter reveal that in air (above water) hearing was similar to sea lions, but underwater hearing sensitivity was significantly lower than that of sea lions and other pinnipeds, especially at low frequencies (Ghoul and Reichmuth 2014). Since sea otter hearing appears primarily adapted to airborne sounds, they are more likely to be affected by above water, rather than underwater disturbances, such as engine noise. There have been few studies of the behavioral responses of sea otters to disturbance by boats although antecdotal evidence suggests reactions range from diving to moving away from the disturbance

to habituation (FWS 2013b). The only portion of the barge corridor where sea otters may be encountered is in the vicinity of Dutch Harbor, an area of already frequent and regular vessel traffic to which sea otters are likely accustomed and unlikely to experience disturbance from additional barge traffic. The rare occurrence of threatened and endangered marine mammals and the absence of major pinniped haulout sites in the Kuskokwim River and mouth of the river suggest minimal likelihood of disturbance from vessel noise in that part of the transportation corridor. Intermittent, temporary behavioral disturbance of fin, humpback, or right whales could periodically occur along the Dutch Harbor to Bethel barge corridor in areas where the species coincide with the shipping route.

Contamination and Fuel Spills

Marine mammals could potentially be exposed to discharges and varying sized spills from vessels transporting fuel and cargo, as well as to fuel spilled at any of several transfer points, including barge to storage tank transfer, or ocean barge to river barge transfer, at the Bethel Port site, and river barge to storage tank transfer at the Angyaruaq (Jungjuk) Port site, or in the event of a stranded barge that requires lightering of fuel.

Section 3.24, Spill Risk, provides analysis of risks and potential impacts of spills from fuel barges and storage tanks along the marine and riverine transportation corridors, including Dutch Harbor, and from tanker trucks traveling to and from the mine site. Please refer to Sections 3.24.6.12.2 and 3.24.6.14.2 for details regarding health effects of hydrocarbon exposure and potential impacts of the different spill scenarios on threatened, endangered, and candidate marine mammals in the EIS Analysis Areas. The risk of catastrophic accidents is very small (likelihood of occurrence is very low during the life of the Project), although small accidents and spills could periodically occur. The severity of impacts would depend on the type of contaminant spilled, the volume and extent of the spill, time and location of a spill, and whether or not threatened or endangered marine mammals are present.

Climate Change Summary for Alternative 2

Predicted overall increases in temperatures and precipitation and changes in the patterns of their distribution (McGuire 2015; Chapin et al. 2010; Chapin et al. 2006; Walsh et al. 2005) have the potential to influence the projected effects of the Donlin Gold Project on marine mammal habitat. Changes in marine productivity could negatively affect food webs. Impacts of climate change to threatened and endangered marine mammals are extremely complex and poorly understood at this time. See Section 3.26, Climate Change, for details on affected environment for resources.

Direct and Indirect Effects

Mine Site – Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

Any direct or indirect effects on threatened or endangered marine mammals incurred during the construction, operations, or closure phases of the mine site would be due to transportation of fuel and materials via barges or construction at the port sites. These are discussed below under Transportation Facilities. There would, therefore, be no direct or indirect effects of the mine site component of Alternative 2 on ESA-protected marine mammals.

Transportation Facilities — Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

Direct and Indirect Effects from Construction

There are two construction components to consider when discussing potential impacts to threatened and endangered marine mammals. One is construction of specific transportation facilities (i.e., at the Bethel cargo terminal, fuel terminal, and tank farm; and the Angyaruaq (Jungjuk) Port site). The other involves shipping and offloading cargo and fuel during construction of the mine site and gas pipeline. Several mechanisms for effects are noted above.

Dock construction at the port sites would involve pile driving. The high amplitude noise from pile driving activities may mask marine mammal vocalizations or cause deflection or avoidance of an area (David 2006; Tougaard et al. 2009; Würsig et al. 2000). Studies of large-scale offshore pile driving suggest audibility depends on propagation conditions and background noise, but could be at great distances from the sound source (Kastelein et al. 2013). Noise could result in some level of temporary displacement or avoidance of the area by marine mammals during pile driving activities (Dahne et al. 2013; Kendall 2010). In areas of more regular or consistent construction activity, ringed seals showed levels of tolerance suggestive of habituation (Blackwell et al. 2004). The frequency of occurrence of threatened and endangered pinnipeds in the area is, however, extremely low, limiting the likelihood that individuals would be adversely affected by construction noise.

During mine construction, supplies will be transported by ocean-going and river barges during the 110-day ice-free shipping season from approximately June 1 to October 1. Cargo barges would make 16 round trips to Bethel within the shipping season during the construction period. Cargo would then either be temporarily stored or transferred to river barges for shipment from Bethel to the Angyaruaq (Jungjuk) Port site. A larger flat deck barge would transport break-bulk and cargo too heavy for the barges, such as equipment. The river cargo barge fleet, comprised of two single-hull pusher tugs with four river barges each, would operate daily during the shipping season, for a total of 64 round trips per season.

Potential effects on Steller sea lions, bearded and ringed seals, and walrus could include temporary displacement during construction at the Bethel Port site and behavioral disturbance or displacement caused by vessel traffic delivering fuel and cargo to Bethel and upriver to the Angyaruaq (Jungjuk) Port site. Since the nearest walrus and sea lion haulouts are in northern Bristol Bay and outside of the Donlin Gold Project area, large scale disturbance of sensitive habitat and life stages is unlikely. Bearded seals in the lower Kuskowkim River are rare (1-2 per year) and the other species may infrequently occur in Kuskokwim Bay, but are unlikely in the river. Given these infrequent sightings, any effects on threatened and endangered pinnipeds due to construction activities in the Kuskokwim River would be of low intensity, temporary, and localized to areas where activities and animals may co-occur. Since the western stock of Steller sea lions is listed as endangered, it is considered unique in context; the other pinnipeds are either listed as threatened or as candidates for threatened listing, so are, in accordance with Table 3.14-7, considered important in context. There have been no reports of ESA-protected cetaceans in the Kuskokwim River, so they would not be affected by construction activities at the Bethel and Angyaruaq (Jungjuk) Port sites.

Fin whales, humpback whales, and right whales could experience periodic low intensity, temporary, localized behavioral disturbance (e.g., avoidance) from passing cargo barges

transporting construction materials from Dutch Harbor to Bethel. The likelihood of injury or mortality from a vessel collision in the barge corridor is low with only 16 round trips per 110 day shipping season during construction. Most whales are likely to move out of the way of an oncoming vessel. However, given the exceedingly small North Pacific right whale population size (about 30 individuals), injury to or mortality of even one individual would have population level effects. As a result, although the likelihood of occurrence might be low, the duration of the activity would be temporary (during construction), and the extent local, if a vessel collision with a right whale occurred, it would be considered of high intensity. All three species are listed as endangered under the ESA, plus right whales have an exceedingly small population size, so all are considered unique in context.

Direct and Indirect Effects from Operations and Maintenance

Shipping activity during the operations phase of the mine site would occur during the ice-free season from about June 1 to October 1. The number of vessels and frequency of operation during this Project component would differ slightly from that during construction, but the potential effects would be similar. Several mechanisms for effects are noted above. Details specific to operations are noted here.

During the estimated 110-day shipping season, ocean cargo barges would complete 12 round trips between marine terminals and the Bethel Port site (see Table 3.14-3). In addition, fuel will be transported from Dutch Harbor to Bethel in an ocean barge towed by a 3,000 horsepower tug and off-loaded at the tank farm for storage or to a river barge for transport. There would be 14 such fuel delivery trips per season. The river barges for cargo are expected to make 32 round trips per barge tow (one tug and four barges) per season for a total of 64 round trips or just over a half trip per day between the Bethel and Angyaruaq (Jungjuk) Port sites. River fuel barges are anticipated to make 29 round trips between Bethel and Angyaruaq (Jungjuk) per barge tow per season, for a total of 58 round fuel trips per season. Total combined fuel and cargo ocean barge trips to Bethel Port site would be 26 per season. Total combined fuel and cargo river barge trips between the Bethel Port site and the Angyaruaq (Jungjuk) Port site on the Kuskokwim River would be 122 round trips per 110-day season.

This increased level of barge traffic in the Kuskokwim River (about 180 percent increase from background) would increase underwater noise levels and the potential for behavioral disturbance of individual marine mammals in the area, such as temporary disturbance or displacement as the tugs and barges pass by. Threatened and endangered pinnipeds are rare in the lower Kuskokwim River (one to two sightings of bearded seals per year, 2007-2009) minimizing the likelihood of repeated co-occurrence with barge traffic. Given the slow speed at which the barges would travel, plus engine noise, marine mammals would likely anticipate approaching vessels with adequate time to move out of harm's way and avoid collisions. Therefore, anticipated effects of transportation facilities in the Kuskokwim River on threatened and endangered marine mammals during the operations phase would be of low intensity, temporary, and localized for both potential behavioral disturbance and injury. The total number of barge trips between Dutch Harbor and Bethel will be higher during operations than during construction, with the addition of fuel barges, but the potential impacts on marine mammals in the Dutch Harbor to Bethel barge corridor would be as described above for the construction period. North Pacific right whales are, again, the species of greatest concern in this region of the EIS Analysis Area, particularly as the duration of project-related activities with the potential to

cause injury or mortality is long-term during the operations phase (barge traffic continues for the life of the project).

Direct and Indirect Effects from Closure, Reclamation, and Monitoring

Direct and indirect effects on threatened and endangered marine mammals incurred during closure of transportation facilities would likely be similar to effects described above for the construction and operations phases, and be largely attributed to transportation of fuel and materials via barges in the Kuskokwim River and mouth of the river, and dismantling of the barge landing at the Angyaruaq (Jungjuk) Port site. Noise generated during removal of the barge landing would likely be of lower amplitude than during dock construction and of shorter duration. The number and frequency of barge trips hauling materials down river would also be lower than during either construction or operations and maintenance. Potential effects from vessel traffic and material and fuel transport are as discussed above. With the lower activity level and shorter time period, potential effects on threatened and endangered marine mammals would likely include behavioral disturbance and be of low intensity, temporary duration, and localized to areas of reclamation and points along the river where barges and seals may occasionally co-occur.

Conclusion for Transportation Facilities

Potential effects on threatened, endangered, or candidate species of marine mammals from the transportation infrastructure component of Alternative 2 would derive from temporary port site construction and periodic fuel and cargo barge traffic on the Kuskokwim River and between Dutch Harbor and Bethel during the approximately 110-day annual shipping season. Anticipated effects would primarily involve behavioral disturbance and temporary displacement with the occasional bearded seal in the Kuskokwim River, and cetaceans (fin, humpback, right whales) in the Dutch Harbor to Bethel barge corridor. Most disturbance effects would be of low intensity (behavioral changes may not be noticeable, animals stay in the area, or reactions are obvious, but temporary and do not affect life functions), temporary in duration (displacement or behavioral changes would only occur during brief periods as barges pass by or for the period of in-water construction noise), and local in extent (disturbance would only occur in specific locations where construction or barge traffic coincide with individual marine mammals). Sea otters in the vicinity of Dutch Harbor are unlikely to be disturbed by the periodic vessel traffic into and out of the harbor. Although the probability of injury or mortality is low, in the case of North Pacific right whales, the consequences would be high. As one of the most endangered stocks of whales in the world, the loss of a single individual, particularly a reproductive female, would have population level effects and would, therefore be of high intensity, as well as long-term (barge traffic will occur throughout the life of the project). All marine mammals are protected under the MMPA, and ESA-listed species are further protected under the ESA. As per criteria shown in Table 3.14-7, bearded and ringed seals, walrus, and the Southwest Alaska DPS of northern sea otters are important in context (threatened or candidate species) and the western stock of Steller sea lions and all of the ESA-listed cetaceans are considered unique in context, due to their endangered listing. In addition to an endangered status, North Pacific right whales and Cook Inlet beluga whales have very small populations. The direct and indirect effects of the transportation infrastructure under Alternative 2 on threatened or endangered marine mammals would for most species and for behavioral impacts be negligible to minor. Injury or mortality impacts on North Pacific right whales could, however, be moderate to major if a very low probability strike by a barge occurred.

Natural Gas Pipeline — Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

Direct or indirect effects on marine mammals incurred during the construction, operations, and closure phases of the natural gas pipeline would be due primarily to transportation of pipe and supplies via barges during the construction period. Potential effects are, therefore, similar in type to those discussed above under Transportation Facilities. Cook Inlet beluga whales are common in upper Cook Inlet, including in the vicinity of the Beluga River and Beluga barge landing. They are, therefore, the ESA-listed species most likely to be affected by vessel activity associated with the natural gas pipeline construction. Behavioral disturbance and temporary avoidance are possible and the barge route traverses Cook Inlet Beluga Designated Critical Habitat Area 1 during the time that it is actively used. Alaska Native beluga whale hunters noted that Cook Inlet belugas are very sensitive to boat noise and will leave areas of high vessel use. Small outboard motors that produce higher frequency sounds have the greatest potential to disturb belugas. In some heavily trafficked areas, such as in the Port of Anchorage, belugas may habituate to the noise (Norman 2011). Potential effects, however, depend on vessel routes, frequency, seasonality, and vessel size and speed, and may include disruption of feeding activities, temporary avoidance or displacement. The anticipated vessel noise produced by the barging activity would exceed the 120 dB behavioral harassment threshold criteria for continuous sounds within 10 miles of the Beluga River, but would diminish to below ambient levels prior to reaching the area of beluga whale concentrations (Appendix O, Biological Assessments). In Cook Inlet, ship strikes from large vessels (those over 30 m length, such as barges and tankers) are not considered a major threat to belugas. These large ships generally travel in relatively straight lines and at slower speeds, enabling belugas to more readily avoid them (Norman 2011). Injury or mortality of Cook Inlet beluga whales from vessel traffic associated with pipeline construction is, therefore, considered unlikely.

Summary of Impacts for Alternative 2

Direct and indirect effects of Alternative 2 on threatened or endangered marine mammals would derive primarily from port site in-water construction and fuel and cargo barge traffic and are summarized below in Table 3.14-8. Injury and mortality are unlikely given the slow vessel speed during river travel and low occurrence of marine mammals in the Kuskokwim River. Although the probability of ship strikes for North Pacific right whales is also low, the impact of such an occurrence would be high. With a remnant population thought to include only about 30 individuals, the loss of a single whale, particularly a reproductive female, would have population level effects. The resulting injury or mortality effects would, therefore, be of high intensity and long-term (barge traffic will occur throughout the life of the project). Overall, the most likely effects on marine mammals would involve behavioral disturbance, such as temporary displacement or avoidance. Anticipated behavioral effects would be of low intensity (may not be noticeable, animals stay in the area, or reactions are obvious but temporary and do not affect life functions), temporary in duration (displacement or behavioral changes would only occur during brief periods as barges pass by or for the period of in-water construction noise), and local in extent (disturbance would only occur in specific locations where construction or barge traffic coincide with individual marine mammal occurrence). The species included here are either listed as endangered (the western stock of Steller sea lions, Cook Inlet belugas, North Pacific right whales, humpback whales, fin whales), threatened (bearded and ringed seals, and the Southwest Alaska DPS of northern sea otters), or are candidate species for

listing under the ESA (Pacific walrus), so are protected by both the ESA and MMPA. Those listed as threatened or as candidate species are considered important in context and those listed as endangered are considered unique in accordance with the impact criteria of Table 3.14-7. The potential direct and indirect effects of each component of Alternative 2 on ESA-listed or candidate species of marine mammals would, therefore, be negligible to minor for most species. In the event of a vessel collision with a North Pacific right whale or a Cook Inlet beluga whale, however, the impact would be moderate or major. This would be in keeping with an ESA effects determination of May Affect, Not Likely to Adversely Affect, for the listed marine mammal species (Draft Biological Assessments, Appendix O). Effects determinations will be made in the ESA Consultation, which is a parallel process to NEPA.

These effects determinations take into account impact-reducing design features (Table 5.2-1 in Section 5.2, Impact Avoidance, Minimization, and Mitigation) proposed by Donlin Gold, and also the Standard Permit Conditions and BMPs (Section 5.3) that would be implemented. Several examples of these are presented below.

Design features most important for reducing impacts to ESA-protected and candidate marine mammal species include:

- Ocean fuel barges would be double hulled and have multiple isolated compartments for transporting fuel to reduce the risk of a spill;
- Barges would travel at 10 knots or less; and
- The project design includes a natural gas pipeline to decrease the amount of barging to transport diesel fuel. The design decision to use a natural gas pipeline instead of barging 110 Mgal of diesel per year was in response to community concern about barge traffic levels.

Standard Permit Conditions and BMPs most important for reducing impacts to ESA-protected and candidate marine mammal species include:

- Development and maintenance of ODPCPs, SPCC Plans, and FRPs.

Additional Mitigation and Monitoring for Alternative 2

While the Corps is considering additional mitigation and monitoring to reduce the effects for other resources (Table 5.5-1 and Table 5.7-1 in Chapter 5, Impact Avoidance, Minimization, and Mitigation), no additional mitigation measures have been identified to reduce effects to threatened or endangered marine mammals. Thus, the summary impact rating for threatened or endangered marine mammals would remain minor for most species, but moderate or major if there was a collision with a North Pacific right whale.

Table 3.14-8: Summary of Effects on Marine Mammals from Alternative 2 by Impact Type and Project Component

Impact Type	Impact Level by Factor				
	Magnitude or Intensity	Duration	Geographic Extent	Context	Summary Impact Rating[1]
Mine Site: no direct or indirect effects of this component on marine mammals (see Transportation)					
Transportation Infrastructure					
Behavioral disturbance	Low	Temporary	Local	Important to Unique (MMPA, ESA protection; very small remnant populations of Cook Inlet belugas and North Pacific right whales)	Negligible to minor
Injury and mortality	Low to High (if a North Pacific right whale or beluga whale is injured or killed)	Temporary to long-term (ship traffic will continue for the life of the project, but use of barge corridors is periodic, not continuous)	Local	Important to Unique (MMPA, ESA protection; very small remnant populations of Cook Inlet belugas and North Pacific right whales)	Negligible to minor for most; moderate to major for right whales if collision occurred
Contamination and fuel spills	Low (numerous regulations, emergency response procedures)	Temporary to Long-term	Local to Regional	Important to Unique (MMPA, ESA protection; very small remnant populations of Cook Inlet belugas and North Pacific right whales)	Minor
Pipeline: Impacts related to transportation during construction (see Transportation)					

Notes:

1 The summary impact rating accounts for impact reducing design features proposed by Donlin Gold and Standard Permit Conditions and BMPs that would be required. It does not account for additional mitigation measures the Corps is considering.

3.14.3.2.3 ALTERNATIVE 3A – REDUCED DIESEL BARGING: LNG-POWERED HAUL TRUCKS

Mine Site — Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

There are no proposed changes to the mine site locations or operations under this alternative. Potential impacts on marine mammals are, therefore, as described above under Alternative 2.

Transportation Facilities — Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

Direct and Indirect Effects from Construction

The decreased diesel fuel use under this alternative would likely not require the increased storage capacity at either Dutch Harbor or Bethel that was proposed under Alternative 2. Diesel storage capacity at Angyaruaq (Jungjuk) Port would also be reduced. Reduced or eliminated need for storage would mean reduced or eliminated construction needs at these ports and reduced potential for construction-related disturbance of threatened and endangered marine mammals.

Direct and Indirect Effects from Operations and Maintenance

Alternative 3A differs from Alternative 2 by a substantial decrease in the number of ocean and river fuel barge trips. Under Alternative 3A, there would be 2 round-trips per shipping season between the Pacific Northwest and Dutch Harbor, compared to 7 trips under Alternative 2. Trips between Dutch Harbor and Bethel would decrease from 14 under Alternative 2 to 5 under Alternative 3A. Finally, the number of river fuel barge trips between Bethel and Angyaruaq (Jungjuk) Port would decrease from 58 round trips per season to 19 round trips. The combined fuel and cargo river barge trips would, therefore, decrease from 122 round trips per season to 83 round trips. Fewer trips would decrease the potential for vessel (including noise) disturbance of, or collisions with, threatened and endangered marine mammals in the Kuskokwim River, the mouth of the river, and the barge corridor between Dutch Harbor and Bethel. The number of cargo trips would be the same as under Alternative 2.

Direct and Indirect Effects from Closure, Reclamation, and Monitoring

Effects from closure under Alternative 3A would be the same as under Alternative 2.

Conclusion for Transportation Facilities

The types of potential effects from the transportation infrastructure component of Alternative 3A would be very similar to Alternative 2 and derive primarily from port site in-water construction and fuel and cargo barge traffic. Decreased fuel barging and construction needs under Alternative 3A would, however, reduce potential impacts associated with vessel traffic and fuel spills from that anticipated under Alternative 2. Although the likelihood of impact would decrease with reduced vessel activity, potential effects would still primarily involve behavioral disturbance and temporary displacement. Sea otters in the vicinity of Dutch Harbor are unlikely to be disturbed by the periodic vessel traffic into and out of the harbor. Effects would be of low intensity (behavioral changes may not be noticeable, animals stay in the area, or reactions are obvious, but temporary and do not affect life functions), temporary in duration (displacement or behavioral changes would only occur during brief periods as barges pass by or for the period of in-water construction noise), and local in extent (disturbance would only occur in specific locations where construction or barge traffic coincide with individual marine mammals). Decreased vessel traffic would also decrease the potential for collisions with right whales in the Dutch Harbor to Bethel barge corridor. However, as described under Alternative 2, even the loss of a single North Pacific right whale would have population level effects and would, therefore, be considered of high intensity as well as long-term (barge traffic will occur

throughout the life of the project). All marine mammals are protected under the MMPA, and ESA-listed species are further protected under the ESA. As per criteria shown in Table 3.14-7, bearded and ringed seals, walrus, and the Southwest Alaska DPS of northern sea otters are important in context (threatened or candidate species) and the western stock of Steller sea lions and all of the ESA-listed cetaceans are considered unique in context, as all are listed as endangered. In addition to an endangered status, North Pacific right whales and Cook Inlet beluga whales have very small populations. The direct and indirect effects of the transportation infrastructure under Alternative 3A on threatened or endangered marine mammals would for most species and for behavioral impacts be negligible. Injury or mortality impacts on North Pacific right whales would be considered moderate or major if a very unlikely strike by a barge did occur.

Natural Gas Pipeline — Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

Construction, operations, and closure phases of the natural gas pipeline under Alternative 3A would essentially be the same as under Alternative 2. Potential effects on threatened and endangered marine mammals would, therefore, be the same as under Alternative 2.

Summary of Impacts for Alternative 3A

Direct and indirect, and cumulative effects of Alternative 3A on threatened or endangered marine mammals would be very similar to Alternative 2 and derive primarily from port site in-water construction and fuel and cargo barge traffic. Decreased fuel barging and construction needs would, however, reduce potential impacts associated with vessel traffic between Dutch Harbor and Bethel and at the mouth of and in the Kuskokwim River from that anticipated under Alternative 2. Impacts associated with climate change would also be the same as those discussed for Alternative 2.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to threatened or endangered marine mammals are described in Alternative 2. The effects determinations take into account applicable impact reducing design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to threatened or endangered marine mammals. Thus, the summary impact rating for threatened or endangered marine mammals would remain negligible to minor for most species, but moderate or major if there was a collision with a North Pacific right whale.

3.14.3.2.4 ALTERNATIVE 3B – REDUCED DIESEL BARGING: DIESEL PIPELINE

Mine Site — Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

The infrastructure at the mine site would be similar to Alternative 2. Potential impacts on threatened and endangered marine mammals under Alternative 3B would, therefore, be as described above under Alternative 2.

Transportation Facilities — Construction; Operations and Maintenance; and Closure, Reclamation, and Monitoring

Direct and Indirect Effects from Construction

Transportation infrastructure for cargo shipments, such as docks in Bethel and Angyaruaq (Jungjuk) Port, would be the same as under Alternative 2. The diesel storage capacity in Dutch Harbor, Bethel, and at Angyaruaq (Jungjuk) Port would likely not, however, be required for Alternative 3B. Under Alternative 3B, the existing Tyonek North Foreland Barge Facility would be improved to accommodate vessels in excess of 30,000 gross tons and provide fuel unloading facilities capable of accommodating the proposed volume of diesel fuel. The dock would need to be extended an additional 1,500 feet. Dock construction at the port sites would involve pile driving. Dredging would not be required, as the dock would be extended out to the required water depth. Effects of construction would be lower than those described under Alternative 2 because of the reduced activity in Kuskokwim Bay, but higher in Cook Inlet and the route leading to it because of the increased vessel trips and construction there. The most likely effects would be possible temporary and localized, low-intensity behavioral disturbance.

Direct and Indirect Effects from Operations and Maintenance

Alternative 3B would decrease peak annual Donlin Gold Project barge traffic on the Kuskokwim River between Bethel and the Angyaruaq (Jungjuk) Port site from an estimated 122 river barge trips per season under Alternative 2 to 64 trips for cargo transit only. Cargo transport between marine terminals and Bethel would be similar to Alternative 2, with 16 round trips per season during construction and 12 during operations. Under Alternative 3B, there would be an additional 12 round trips per season to transport fuel from either marine terminals in the Pacific Northwest or from the Tesoro refinery in Nikiski to Tyonek. Decreased barge traffic on the Kuskokwim River would decrease the likelihood of potential interactions with marine mammals in Kuskokwim Bay and the Bering Sea. Additional diesel tanker traffic across Cook Inlet into Tyonek could increase the potential for behavioral disturbance of Cook Inlet beluga whales, particularly during fall and winter, as the shipping route traverses Cook Inlet Beluga Critical Habitat Area 2, with known fall and winter use Overall, potential effects would likely involve behavioral disturbance and be temporary (for the duration of a tanker passing by), localized (in the vicinity of vessel traffic), and of low-intensity (some behavioral modifications may occur, but are not likely to exceed temporary avoidance). The magnitude of disturbance to Cook Inlet beluga whales depends on the tanker schedule and the extent to which vessel traffic and belugas coincide.

Direct and Indirect Effects from Closure, Reclamation, and Monitoring

Effects from closure under Alternative 3B would be similar to those under Alternative 2.

Conclusion for Transportation Facilities

Potential effects from the transportation component of Alternative 3B would be similar to Alternative 2 and derive primarily from port site in-water construction and fuel and cargo barge traffic. Reduced fuel barge traffic and construction needs in the Kuskokwim River, Dutch Harbor, and between Dutch Harbor and Bethel would reduce potential impacts associated with vessel traffic and fuel spills in those areas from those anticipated under Alternative 2. Although

the likelihood of impact would decrease with reduced vessel activity in the Dutch Harbor to Bethel barge corridor and in the Kuskokwim River area, potential effects would still primarily involve behavioral disturbance and temporary displacement. Effects would be of low intensity (no noticeable or lasting change in behavior), temporary in duration (displacement or behavioral changes would only occur during brief periods as barges pass by or for the period of in-water construction noise), and local in extent (disturbance would only occur in specific locations where construction or barge traffic coincide with individual marine mammals). Sea otters in the vicinity of Dutch Harbor are unlikely to be disturbed by the decreased level of periodic vessel traffic into and out of the harbor. Additional barge and tanker traffic into Tyonek could increase the potential for behavioral disturbance of Cook Inlet beluga whales, since it traverses designated Cook Inlet Beluga Whale Critical Habitat Area 2, used primarily during fall and winter. Potential effects, however, would likely involve behavioral disturbance and be temporary to long-term (for the duration of a barge passing by, but would occur throughout the years of operation), localized (in the vicinity of vessel traffic), and of low to medium intensity (some noticeable behavioral modifications may occur, but are most likely to involve temporary avoidance). The magnitude of disturbance on Cook Inlet beluga whales depends on the tanker schedule and the extent to which vessel traffic and belugas coincide. All marine mammals are protected under the MMPA and those listed as threatened or endangered are further protected by the ESA. As per criteria shown in Table 3.14-7, bearded and ringed seals (threatened), the Southwest Alaska DPS of the northern sea otter (threatened), and walrus (candidate) are considered important in context and the western stock of Steller sea lions (endangered) and all of the ESA-listed cetaceans (endangered) are considered unique in context. In addition to an endangered status, North Pacific right whales and Cook Inlet beluga whales have very small population sizes. Furthermore, Cook Inlet beluga whale range is essentially restricted to upper Cook Inlet. The direct and indirect effects of the transportation infrastructure under Alternative 3B on threatened or endangered marine mammals would be negligible to minor for most species or moderate to major for Cook Inlet beluga whales and North Pacific right whales in the event of a very low probability vessel strike.

Summary of Impacts for Alternative 3B

Direct and indirect effects of Alternative 3B on threatened or endangered marine mammals would be very similar to Alternative 2. The risks of vessel strikes would be lower for North Pacific right whales, but higher for beluga whales. Impacts associated with climate change would be the same as those discussed for Alternative 2.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to threatened or endangered marine mammals are described in Alternative 2. The effects determinations take into account applicable impact reducing design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to threatened or endangered marine mammals. Thus, the summary impact rating for threatened or endangered marine mammals would remain negligible to minor for most species, but moderate or major if there was a collision with a North Pacific right whale or a Cook Inlet beluga whale.

3.14.3.2.5 ALTERNATIVE 4 – BIRCH TREE CROSSING PORT

Because the activities of Alternative 4 in the areas where threatened and endangered marine mammals would occur would be the same as those of Alternative 2, the potential direct and

indirect impacts on threatened and endangered marine mammals under Alternative 4 would be the same as described above under Alternative 2. Impacts associated with climate change would also be the same as those discussed for Alternative 2.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to threatened or endangered marine mammals are described in Alternative 2. The effects determinations take into account applicable impact reducing design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to threatened or endangered marine mammals. Thus, the summary impact rating for threatened or endangered marine mammals would remain negligible to minor for most species, but moderate or major if there was a collision with a North Pacific right whale.

3.14.3.2.6 ALTERNATIVE 5A – DRY STACK TAILINGS

Because the activities of Alternative 5A in the areas where threatened and endangered marine mammals would occur would be the same as those of Alternative 2, the potential direct and indirect impacts on threatened and endangered marine mammals under Alternative 5A would be the same as described above under Alternative 2. Impacts associated with climate change would also be the same as those discussed for Alternative 2.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to threatened or endangered marine mammals are described in Alternative 2. The effects determinations take into account applicable impact reducing design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to threatened or endangered marine mammals. Thus, the summary impact rating for threatened or endangered marine mammals would remain negligible to minor for most species, but moderate or major if there was a collision with a North Pacific right whale.

3.14.3.2.7 ALTERNATIVE 6A – MODIFIED NATURAL GAS PIPELINE ALIGNMENT: DALZELL GORGE ROUTE

Because the activities of Alternative 6A in the areas where threatened and endangered marine mammals would occur would be the same as those of Alternative 2, the potential direct and indirect impacts on threatened and endangered marine mammals under Alternative 6A would be the same as described above under Alternative 2. Impacts associated with climate change would also be the same as those discussed for Alternative 2.

Design features, Standard Permit Conditions and BMPs most important for reducing impacts to threatened or endangered marine mammals are described in Alternative 2. The effects determinations take into account applicable impact reducing design features, as discussed in Alternative 2. No additional mitigation measures have been identified to reduce effects to threatened or endangered marine mammals. Thus, the summary impact rating for threatened or endangered marine mammals would remain negligible to minor for most species, but moderate or major if there was a collision with a North Pacific right whale.

3.14.3.2.8 IMPACT COMPARISON

A comparison of the impacts on listed marine mammals by alternative is presented in Table 3.14-9. The primary project component that could affect listed marine mammals is the increase

in ocean barge traffic; therefore alternatives 2, 4, 5A, and 6, which would all have 26 ocean barge trips and 122 river barge trips per year, all have the same potential for negligible to minor impacts on listed or candidate marine mammals (except for North Pacific right whales, for which the impacts would be moderate to major in the unlikely event that one is hit). Under Alternative 3A there would be 17 ocean barge trips and 83 river barge trips, thus reducing the potential for impacts. Under Alternative 3B there would be 12 ocean barge trips to Bethel and 64 river barge trips, but there would be 12 trips through Cook Inlet. Therefore, risks to beluga whales increase under Alternative 3B.

Table 3.14-9: Comparison of Impacts by Alternative*

Impact-Causing Project Component	Alternative 2 – Donlin Gold's Proposed Action	Alternative 3A – Reduced Diesel Barging: LNG-Powered Haul Trucks	Alternative 3B – Reduced Diesel Barging: Diesel Pipeline	Alternative 4 – Birch Tree Crossing (BTC) Port	Alternative 5A – Dry Stack Tailings	Alternative 6A – Modified Natural Gas Pipeline Alignment: Dalzell Gorge Route
Increased barge traffic	122 river trips/ year 26 ocean trips / year from Dutch Harbor to Bethel	83 river trips / year 17 ocean trips / year from Dutch Harbor to Bethel	64 river trips / year 12 ocean trips / year to Bethel (16 during construction) plus 12 / year across Cook Inlet to Tyonek	122 river trips/ year, but only to BTC. 26 ocean trips/ year from Dutch Harbor to Bethel	Same as Alternative 2.	Same as Alternative 2.
Risk of injury or mortality from collisions	Potential for negligible to minor impacts (moderate to major if a N. Pac. right whale is struck)	Fewer barge trips lowers potential for impacts	Fewest Dutch Harbor to Kuskokwim trips means lowest potential for impacts there, but added trips in Cook Inlet increases the potential risk for belugas	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
Behavioral disturbance	Potential for negligible to minor impacts	Potential for negligible to minor impacts	Potential for negligible to minor impacts (Depending somewhat on the tanker schedule in Cook Inlet relative to distribution of belugas)	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.

Table 3.14-9: Comparison of Impacts by Alternative*

Impact-Causing Project Component	Alternative 2 – Donlin Gold's Proposed Action	Alternative 3A – Reduced Diesel Barging: LNG-Powered Haul Trucks	Alternative 3B – Reduced Diesel Barging: Diesel Pipeline	Alternative 4 – Birch Tree Crossing (BTC) Port	Alternative 5A – Dry Stack Tailings	Alternative 6A – Modified Natural Gas Pipeline Alignment: Dalzell Gorge Route
Conclusion	Negligible to minor impacts (moderate to major if a N. Pac. right whale is struck) from increased barge traffic	Reduced chance of negligible to minor impacts (moderate to major if a N. Pac. right whale is struck) from increased barge traffic due to fewer barge trips / year.	Least chance of negligible to minor impacts for most species from barge traffic because fuel barges and their potential impacts would be greatly reduced in the Bering Sea barge corridor and in Kuskokwim Bay and River. Cargo barge activity would be the same as in Alternative 2. Addition of fuel barges traversing Cook Inlet beluga whale critical habitat would increase the risk of behavioral disturbance to Cook Inlet beluga whales.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.

Notes:

* The No Action Alternative would have no impacts on listed marine mammals.